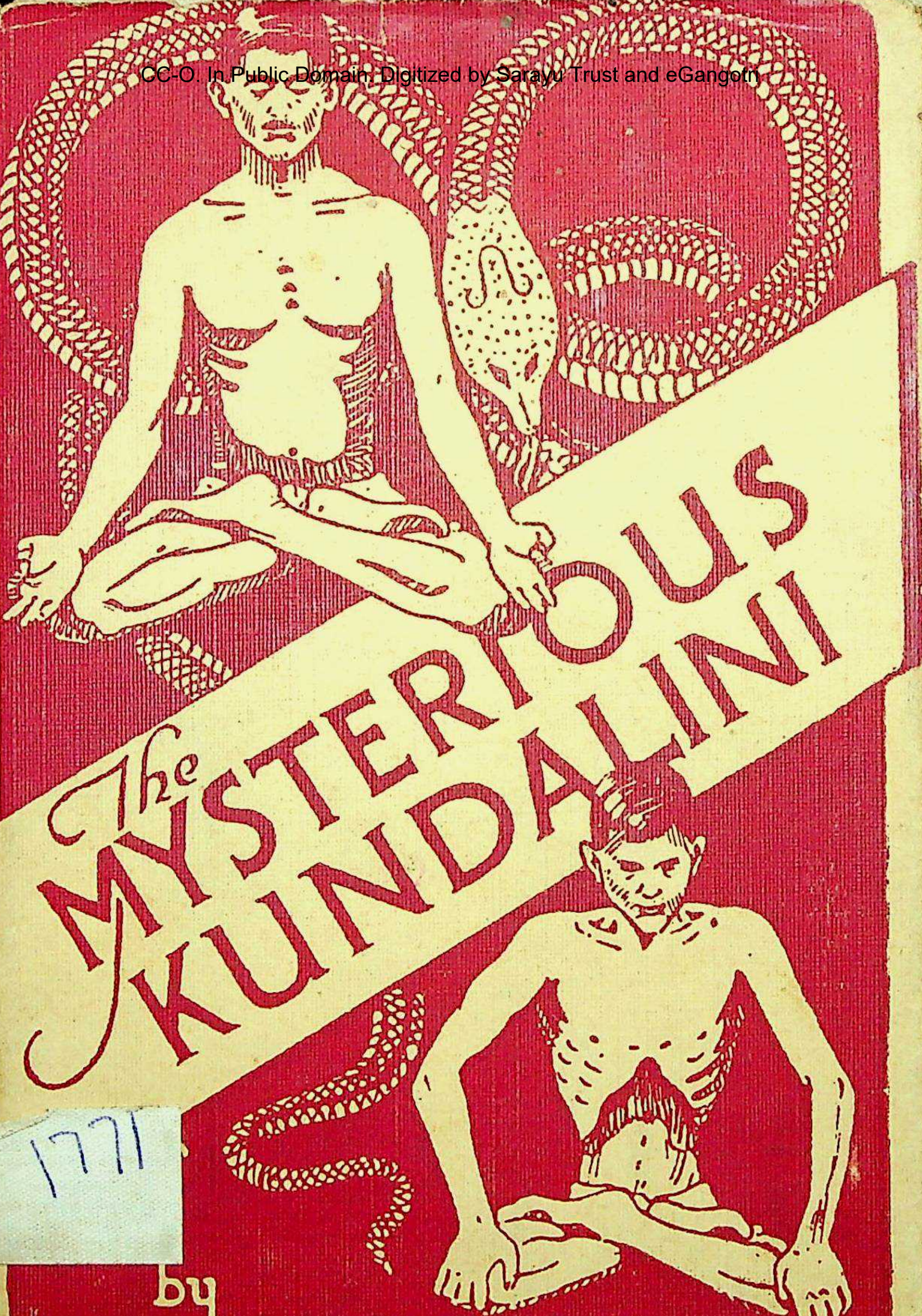
The Mysterious Kundalini



1771

by

VASANT G. RELE.

THE MYSTERIOUS KUNDALINI

The Spectator, London.—"The most serious contribution yet made towards an understanding of an important branch of Eastern Learning."

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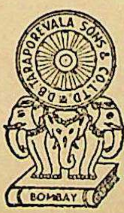
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The Lyceum Banner.—"The various nerve centres are located in six plexuses which the student of Yoga claims to be able to control. There are exercises and diagrams which explain the various stages."

Mahratta.—"The labour and intelligence he has brought to bear on the subject will be sure to provide inspiration to others."

THE

MYSTERIOUS KUNDALINI

THE PHYSICAL BASIS OF THE "KUNDALINI (HATHA) YOGA" IN TERMS OF WESTERN ANATOMY AND PHYSIOLOGY

BY

VASANT G. RELE

F.C.P.S., L.M. & S.

AUTHOR OF "BHAGAVAD GITA—AN EXPOSITION,"
"THE VEDIC GODS—AS FIGURES OF BIOLOGY," ETC.

FOREWORD
BY
SIR JOHN WOODROFFE, KT.
(ARTHUR AVALON)

8th Edition

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Dedicated
To
Those Interested
In
The Science of Yoga

OPINION

I have read this work of my old pupil Dr. Vasant G. Rele with the deepest interest. His views on the physiological explanation of the powers which the Yogis attain by their methods have much to be said for them and are of fascinating interest. The physiological facts and laws he quotes are truthfully and faithfully stated. The work has involved much study and thought and has been carried out with great ability.

C. H. L. MEYER, M.D. (London), etc.
LT. COLONEL, I.M.S. (Retd.)
Sometimes Professor of Physiology,
Grant Medical College, Bombay.

FOREWORD

by

SIR JOHN WOODROFFE, KT.

Author of "Serpent Power", etc.

The Tantras have a twofold significance as Manuals of Sâdhana whether by way of worship: (Upâsanâ), or for extension of natural powers: (Siddhi), or by way of Yoga to attain the Highest Worth: (Paramârtha). In the Yoga aspect they are important because of their Hatha Praxis which seeks a development of man as a physical whole, as a propædeutic for Laya or Kundalini Yoga. In fact they are the repository of this particular type of Yoga. That such Yoga has been practised with some result I believe, not because I have personal experience in the matter but because it is an ancient Yoga and *a priori* it is not credible that men should continue to practise anything without attainment of any result. What may be its value is another question, a matter upon which I am not so sure as I once was. That this form of Yoga has a parapsychic interest is very clear. That it is, from what is called the " spiritual " aspect, of equal value is not now so clear to me. That it may be dangerous is admitted by those who practise it. To me the Yogas of certain worth are those of Karma, Bhakti and Jnâna. There are, however, apparently some to whom Kundalini Yoga makes special appeal, and who receive satisfaction therefrom. In any case the test is that of Ayurveda, namely results. If I deal with this matter here it is because, on further consideration, I am disposed to think that I underrated in my *Serpent Power* the value of some adverse criticism of this Yoga which I, in the volume mentioned, quoted. However this be, Kundalini Yoga is of great scientific, parapsychic, and metaphysical interest and I am glad to provide an introduction to the present conscientious and valuable enquiry. For, while the Yoga must be understood from its metaphysical and religious side, it has also a scientific aspect which must be dealt with by physiologists and others. I am very pleased, therefore, that the author, a competent man of science, has given to the subject the scientific attention which it has long required.

His view is an original one, namely that Kundalini is the right Vagus Nerve. As to this I would say that Kundalini herself cannot be that and for this reason. She is the Grand Potential. As such she cannot, in my view, be identified with any of the products which she becomes. Kundalini, in my opinion, is a gross form of Shakti. I say a gross form because the Shaktis of the Lord are many such as His own Ananda Shakti and others. What in the Lord are Jnâna, Kriyâ and Mâyâ Shakti, these are Sattva, Rajas and Tamas in the Pashu. Kundalini Shakti in bodies is Prakriti Shakti, an evolute of the Lord's Mâyâ Shakti. From this latter and the Kanchukas come the Purusha and Prakriti Tattvas. Prakriti is the the root of Psycho-physical substance which evolves into the Tattvas from Buddhi to Prithivi which constitute the bodies of the Atman as consciousness (Chit). She is then not as such, in my view, a nerve or any other physical substance or mental faculty but the Ground Substance of both which, on being roused, ascends and is merged in the higher Tattvas ending in Shiva-Shakti Tattvas when she is said to be merged in Paramashiva. The Yoga is, in short, an evolutionary movement which is the reverse of the involution into matter which constitutes the Universe. Kundalini is the Dynamic Real as the residual Power, the Power "left over" (to use a gross expression, for we can find no others) after the production of Prithivi when she coils herself around the Linga or Static Real and rests.

But if I am right in this, that is not to say that the Author's theory is without value. On the contrary it seems to me to have a worth which calls for examination, for assuming that Kundalini is not to be identified with the Vagus Nerve it may yet well be that the Nerve has that function of practical importance in this Yoga which the Author claims to have discovered. It may not be only an important, but perhaps as he claims, the most important element in the actual Yogic working. Whether this be so or not I cannot say, for I am not a physiologist. It is for other scientific men to deal with the correctness of the Author's conclusion. All that I can, and do now, say is that (incompetent as I am to pass any scientific criticism upon the Author's work) it yet seems to me that he has made out a case for examination. But as to this I would premise that we must also deal with the Yoga Texts to some of which I have referred in my *Serpent Power*. It may be that some of the Texts have not been rightly understood, for there are differences of interpretation. I am glad then to know that a man of the scientific attainments of the Author has taken the matter in hand and has thus encouraged others to follow or to criticise him. If he has made the discovery he claims, so much the better. In any case the point of present value is that he has carefully considered the subject and has offered us an argument in support of his conclusions. What we have to do in this or any other matter in the Shastras is to make *living* for us to-day the Scriptural Texts of the past. That there is more in them than some English educated Indians have supposed, is the conclusion at which I long ago arrrived. Others besides myself will thank the Author for his devoted labour, the product of which I recommend to the Judgment of the reader, Indian or other. From the friction of the mental Arani, the Fire of Knowledge is kindled.

Oxford
11th January 1927

JOHN WOODROFFE

PREFACE

This book was at first a small paper read before the Bombay Medical Union in the month of July 1926. My initial aim was to attempt explaining some of the Yogic phenomena in terms of Western anatomy and physiology. The effort was greatly appreciated by those assembled, and a desire was expressed that I should have the paper printed for the benefit of those interested in the science of Yoga. I felt impelled further to enlarge the scope of the paper by including explanations of many other Yogic phenomena and technical terms that were not dealt with in my original paper.

The reading of various manuals of the Kundali-Yoga, preparatory to writing that paper, convinced me that they are more or less treatises on the autonomic nervous system, and these explain methods for establishing a conscious control over it. By the establishment of that control, an individual is said to gain supernatural powers by which he performs certain miracles.

The chief books used as the basis of that paper, are the three well-known Sanskrit texts with commentaries, *viz.*, "Hatha-Yogapradipika," "Shiva-samhita" and "Shatchakra nirupanam."

The explanations of the various Yogic practices and phenomena given by me in the following pages are possible suggestions only, and are to be taken as tentative till they are further substantiated by someone better versed in the Science of Yoga and Western science alike.

My sincere thanks are due to Mr. S. S. Mehta, B.A., for encouraging me to write this paper and for various valuable suggestions he made.

My thanks are also due to Swami Kuvalayananda (Mr. J. G. Gune, B. A.) for supplying me with photographs of Mudrâs and Âsanas for inclusion in this book.

V. G. RELE

CONTENTS

PAGE

FOREWORD IX

PREFACE XIII

INTRODUCTION XXI

Genesis of the Book. Physical development of Deshbandhu. The feats of Deshbandhu. The condition of his heart. Suggestions inadequate to explain the phenomena. Abnormality emphasised. A kindred abnormality. A Yogic feat. Suggested explanation. Digression.

CHAPTER 1

SCIENCE AND PHILOSOPHY OF YOGA 1

Definition and varieties of Yoga. Steps necessary for the achievement of Yoga. Yama. Niyama. Âsana. Prânâyâma. Regulation and control of breath. Classification of breathing. Yoga breathing. Training of the will. The Technique of Prânâyâma. Pose for practising Prânâyâma. Pratyahâra. Dhâranâ, Dhyâna and Samâdhi. Significance of the various steps of Patanjali. Importance of Dhâranâ.

CHAPTER II

YOGA PRACTICES 16

Yogic practices control Autonomic Nervous System. The Sympathetic and Cerebro-Spinal elements. A résumé of the Autonomic Nervous System. The Sympathetic portion, its purpose. The Para-sympathetic portion, its purpose. Sympathetic *v.* Para-sympathetic.

PAGE

CHAPTER III

TÂNTRIC ANATOMY OF NERVES, NÂDIS, CHAKRAS, SHAKTIS 22

Nerves mentioned in Yogic literature. Location of the Idâ and Pingalâ Nâdis. Location and description of Sushumnâ Nâdi. Control of Sushumnâ annihilates time. Through Sushumnâ latent powers are developed. Chakras or Plexuses. Location and powers of Chakras. Dâkini and Râkini Shaktis. Lâkini Shakti. Kâkini Shâkti. Shâkini Shakti. Hâkini Shakti.

CHAPTER IV

KUNDALINI — ITS LOCATION AND FUNCTIONS 33

The Mysterious Kundalini bestows supernatural power. Kundalini as described by others. Location of the Kundalini. Location and description of the Kanda. Location discussed. Kanda and Kundalini. Kundalini and Sushumnâ. Kundalini and Brahma-dwâra, The awakening of Kundalini. Kundalini and the six doors leading to Brahma-randhra. The origin of Vâsanâ traced. Randhra defined.

CHAPTER V

KUNDALINI IDENTIFIED WITH RIGHT VAGUS NERVE 43

Kundalini a nerve. Kundalini identified as the Vagus. The Vagus nerve, its source and function. The uniqueness of the Vagus nerve. Afferent and efferent fibres. Their functions. Their control. Parts of the Vagus. The Yogic phenomena in physiological language. Apparent anomaly reconciled. Kundalini corresponds to the right Vagus nerve.

PAGE

CHAPTER VI

PANCHA PRÂNAS AND PANCHA VÂYUS .. 53

The Pancha-Prânâs. Udâna—Prâna—Samâna—Apâna—Vyâna. Panch-Prânâs physiologically explained. Location and function of the Pancha-Prânâs. Location of Udâna. Location of Prâna. Location of Samâna. Location of Apâna. Location of Vyâna. Five Upa-prânâs. The five Vâyus. Their function.

CHAPTER VII

AWAKENING OF KUNDALINI BY BANDHA PROCESSES 61

Bandha and Mudrâ. Making Kundalini impressionable. Distinction between Âsana and Mudrâ. Superiority of Hatha Yoga over Jnâna Yoga. The three Bandhas and their practice. Their effects on the autonomic nerves. On structure of the body. Katabolic disturbance unconsciously controlled. Sushumnâ necessary for conscious control. Nâda produced by meeting of Prâna and Apâna. Bandha and Prânâyâma establish conscious control over Kundalini.

CHAPTER VIII

AWAKENING OF KUNDALINI BY MUDRÂ PRACTICES 70

Shaktichalan Mudrâ. Meeting of Prâna and Apâna Vâyus essential for conscious stimulation of Kundalini. Shanmukhi Mudrâ, its importance. Khechari Mudrâ, its importance and effects. Khechari — King amongst

PAGE

Mudrâs. Effects of Khechari-Mudrâ on the circulation of the blood. It helps to keep Prâna bottled up in body. Elongation of the tongue, a prime factor. A method of elongation. The moment for rolling back the tongue. Importance of Mudrâs. Samyama for willing Kundalini to action.

CHAPTER IX

ASHTA SIDDHIS 79

Nirvikalpa Samâdhi. Ashta Siddhis. Animâ or the microcosm. Mahimâ or the microcosm. Laghimâ or lightness. Garimâ or gravity. Prâpti or success. Prâkâmya or overgain. Vasitvam or subjection. Ishatvam or dominion. Probable explanation of Siddhis.

CHAPTER X

SUMMARY 85

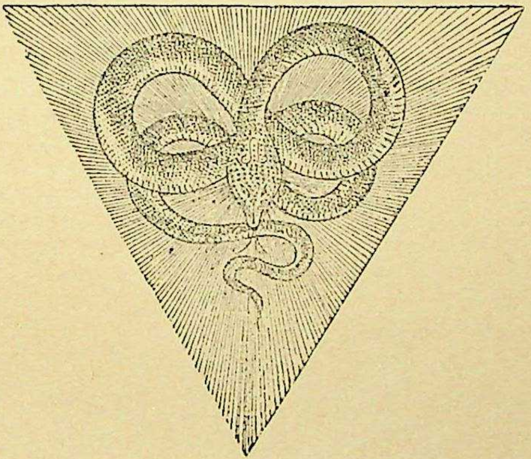
Summary of the Book. Scientific definition of Kundalini Yoga.

BIBLIOGRAPHY 87

APPENDIX 88

कंदोर्ध्वं कुन्डली शक्तिः सुप्ता मोक्षाय योगिनाम् ।
बंधनाय च मूढानां यस्तां वेत्ति स योगवित् ॥

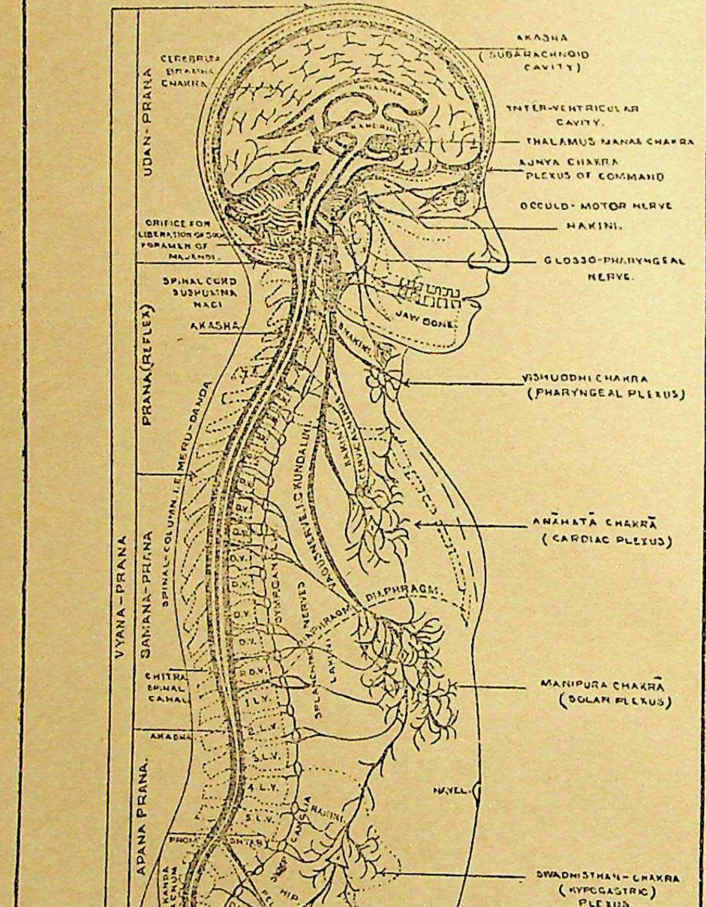
कुन्डली कुटिलाकारा सर्पवत्परिकीर्तिता ।
सा शक्तिश्चालिता येन स मुक्तो नात्र संशयः ॥



The Kundalini is sleeping above the Kanda dispensing
liberation to Yogis and bondage to fools.
He who knows her knows Yoga.

The Kundalini, crooked in form, is described as being coiled
like a Serpent. He who causes that Shakti
to move is certain to be freed.

DIAGRAM OF THE AUTONOMIC NERVOUS SYSTEM ACCORDING TO THE WESTERN ANATOMY SHOWING SIX PLEXUSES OF THE SYMPATHETIC AND THE COURSE OF THE VAGUS NERVE


UDAN-PRANA
PRANA (REFLEX)
VYANA-PRANA
SAMANA-PRANA
APANA PRANA.
CEREBRUM BRAHMA CHAKRA
BRAHMA
KAMESH
ORIFICE FOR LIBERATION OF SOUL FORAMEN OF MAJENDI.
SPINAL CORD SUSHUMNA NADI
AKASHA.
SPINAL-COLUMN I.E. MERU-DANDA
VAGUS NERVE I.E. KUNDALINI
SYMPATHETIC
CERVICAL GANGLIA
RAKINI
SHAKINI
JAW BONE.
D.V.
SYMPCAN
NERVES
SPLANCHNIC
DIAPHRAGM
LAKINI
DIAPHRAGM.
CHITRA SPINAL CANAL
1 L.V.
2 L.V.
3 L.V.
4 L.V.
5 L.V.
AKASHA
GANGLIA
RAKINI.
PROMONTARY
KANDA SACRUM
DAKINI
PELVIC
HIP BONE
NERVE
COCCYX
AKASHA (SUBARACHNOID CAVITY)
INTER-VENTRICULAR CAVITY.
THALAMUS MANAS CHAKRA
AJNYA CHAKRA PLEXUS OF COMMAND
OCCULO-MOTOR NERVE
HAKINI.
GLOSSO-PHARYNGEAL NERVE.
VISHUDDHI CHAKRA (PHARYNGEAL PLEXUS)
ANĀHATĀ CHAKRĀ (CARDIAC PLEXUS)
MANIPURA CHAKRĀ (SOLAR PLEXUS)
NAVEL.
SWADHISTHAN-CHAKRA (HYPOGASTRIC) PLEXUS.
MULADHARA-CHAKRA. I.E. (PELVIC PLEXUS OF THE SYMPATHETIC)
ROOT OF PENIS
ANUS
PERINIUM YONI

DESIGNED BY DR. V. G. RELE

INTRODUCTION

GENESIS OF THE BOOK. In the year 1926, under the auspices of The Bombay Medical Union, Deshbandhu ... ... demonstrated certain phenomena, such as the stopping of the radial and the temporal pulse on both sides at will, and the stopping of the heartbeats for a few seconds. He also showed some rare feats of archery, such as the splitting of a hair and a thread by an arrow shot at them from a distance of 15 to 20 feet. He broke an iron chain three-eighths of an inch in thickness by a mere tug of his body at the chain fixed at the other end; one jerk, and crack went the chain in two pieces. *How was that done* was the expression that ran from mouth to mouth at the moment, and a good many present offered explanations; each in his own way. Some said it was due to muscle control; others said it was sheer hypnosis produced in a man who watched the pulse, while a few others suggested nerve control. The gentleman performing these feats did it by knowledge of Yogic Science and Prânâyâma. Everyone certainly wants to know the actual causation of these rare phenomena. I think, medical men, knowing as they do both anatomy and physiology of human body, ought to be able to explain these, and nevertheless even to them, it is a very difficult matter. Perhaps what is abnormal to men living on a lower plane of vibrations, is normal to those who live on a slightly higher plane of vibrations. The muscles of the heart, as well as arteries and intestines, which are normally not under our control, are made to act like voluntary muscles by certain methods and procedure which are followed so as to reach that higher plane of vibrations that is in tune with the Infinite.

Let me first describe the physical development and appearance of this gentleman. A middle-aged man, of average height, of slender body, with chest not broad enough to compare favourably with an athlete of average development, with long thin legs, and calf muscles showing insufficient physical exercise, could hardly be considered impressive enough physically; yet he had the strength to break a chain by a mere tug of his body. His voice, too, was not alluring or hypnotising. This power of breaking a chain is supposed to be possessed by men of an athletic type, with a better muscular development. But the physical development of Deshbandhu has given the lie direct to our supposition and proved to us that it is not the development of the muscles of the body that counts, but the power behind it. We call that power, the power of endurance. I need not go deep into this, but one thing I may say, that while Western methods of physical culture pay greater attention to the graceful development of muscles of the body, the Indian methods of physical culture, on the other hand, aim at increasing the power of endurance. This, I believe, has been amply proved by the exploits of the Indian army in the recent war.

THE FEATS OF DESHBANDHU. I will now try to describe in detail the various feats performed by Deshbandhu, and also describe the condition of his body during those performances. Unfortunately under the auspices of the Bombay Medical Union the feats were performed at a late hour in the evening when it was difficult to observe the different expressions on his face while he was undergoing the tests. I had, however, witnessed those very feats under better conditions. The show was given before the students of a Medical College and a few guests. Myself and my companion, a doctor of medicine, were selected to judge the truth of his statements and to report to the students what we actually saw and felt, thus affording us the full opportunities of watching at close quarters. Moreover, the show was given in broad day-light. Leaving aside his various feats of archery wonderful enough though they may be in themselves, it is his feats in controlling the heart and pulse which are of first importance to the medical student. The first performance consisted of stopping of the radial pulse at the wrist. During this performance, I was feeling his right radial puse and my companion his left. He was asked to stop his pulse at the right wrist. At this, he took a deep inspiration followed by a forced expiration and after an interval of about six seconds inquired of me if I felt his pulse to which I replied in the negative. I had, however, noted a marked acceleration of his pulse for two or three seconds immediately after he made a forced expiration followed by a slowing for two or three seconds before the pulsation ceased to be felt. After an interval of one complete minute by the watch he again inquired if I felt his pulse when again I replied in the negative. The same condition continued further for one minute. Thereupon he told us that he could continue stopping his pulse for even another minute but just as he uttered these words, I had felt two or three pulsations before it again continued to be imperceptible. This was immediately brought to his notice by me to which his only explanation was that such, indeed was sometimes the case. He further assured us that he could stop his pulse continuously for four minutes. Corresponding with the period during which his pulse was not felt, I had observed that his fingers were tremulous. His hand was livid but not cyanosed. During all this performance, his pulse at the other wrist was running normal as I ascertained from my companion and further confirmed by me when he reversed the process. A doubt was raised by the audience, and we were asked to note if the muscles of his arm and forearm were contracted. On examining these muscles when he again stopped the pulse, we had found that they were quite soft and pliable. It is well known that no amount of muscular contraction could stop the arterial pulse or circulation at a point; at the most the venous flow can be retarded, and that too, only when the muscles are contracted for a long time.

Next, with the chest pieces of our stethoscopes on his heart, we listened to the stopping of the beats of his heart. The process of deep breathing and forced expiration was repeated and within a few seconds, we could hear the heart-beat flutter, then slow down before it completely stopped. The duration of complete stoppage of the heart-beat was six seconds by the watch. When the beats recommenced, there was again an irregular fluttering of the heart, before the sounds became regular once again. The total duration of these phenomena, from the first irregular beating of the heart preliminary to its stoppage, right up to the recovery of its normal rhythm, was eighteen seconds. I particularly mention this, because of the fact that the period prior to the stoppage of the pulse and the heart-beats was six seconds in either case. There appears, moreover, to be a peculiar rhythm of six seconds, in heart phenomena—preliminary acceleration six seconds, stoppage six seconds, and return to normal beats six seconds. This peculiarity has its own significance which will be dealt with later on. A diagrammatic representation of the heart phenomena is shown in the accompanying diagram.

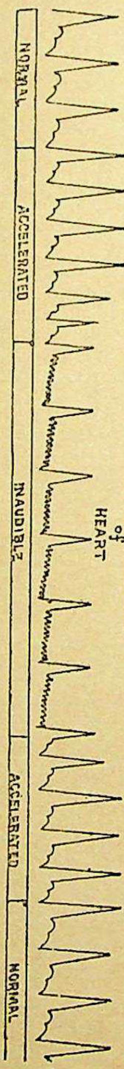


DIAGRAM SHOWING ACTION of HEART

According to the statement of Deshbandhu, he could, under favourable conditions, stop the heart for eighteen seconds–a multiple of six. We also watched him stopping the temporal pulse at will. Not satisfied with what we saw and felt, we requested Deshbandhu to repeat his performances of stopping the heart-beat while we observed it under X-Rays through a screen. Eight other medical men of repute, besides myself, were present, and the following is an accurate description of what we all actually saw. His heart was first examined under normal conditions and the point of its apex-beat was marked on the screen. He was then asked to breathe deep in and out, and again the apex-beat was marked on the screen. We found that, after each complete inspiration, his apex-beat was about half an inch internal to its normal position. Then he was asked to stop the beating of the heart. His heart, thereupon, contracted and became smaller and smaller in size until it reached a minimum limit when its apex was about two thirds of an inch internal to its normal position. The apex-beat of the heart became inaudible, though the rhythmic contraction of the heart muscle still persisted. A graphical representation of his pulse and heart corroborated the facts mentioned above. The cardiogram showed that the heart muscle was rhythmically contracting sixty times a minute, though its beating was inaudible. It may be that this is the normal rhythm of the cardiac muscle itself but not of the heart with the blood flowing through it. The researches of Crile have proved that the heart muscle can be made to continue its rhythmic contractions outside the body by perfusing it with a suitable fluid. The normal rhythm of the heart, with blood flowing through it, is seventy-two beats per minute—again a multiple of six. This, perhaps, is due to the pressure and composition of the blood acting on and stimulating the fibres of the sympathetic nerves of the autonomic nervous system, situated in the muscle of the heart.

SUGGESTIONS INADEQUATE TO EXPLAIN THE PHENOMENA. I have now given the data in detail. The question before us is: "How is this done?" Can we explain the various phenomena, so produced, by our present knowledge of physiology and anatomy?

Let us first see whether the suggestions made by some of the members present can explain the various phenomena. I do not think much of that explanation which is of the import that there exists such a thing as independent control of the muscle; for to put the muscles in action, there must be some invisible excitation in the form of a thought or some direct stimulus for the contraction of voluntary muscles. Even in those persons who are able to control the involuntary muscles, over which we have normally no control, the inhibitory and accelerating impulses must pass through nerves. A second suggestion is that the organs normally containing involuntary muscles alone are perhaps in an abnormal case made up of voluntary muscles thus enabling such an abnormal individual to bring these organs under the control of the central nervous system. But here the risk of life would be too great. The abnormal man so constituted could live and die or come to life again at his own sweet will. He could give rest to his heart at any moment by sending inhibitory impulses through the central nervous system and stop its movements altogether for some time and cause it to become, so far as our knowledge goes, a dead weight, there being no rhythmicity in the voluntary muscular fibres. Would the man be alive then to send acceleratory impulses to that dead organ—an organ which carries nourishment through the blood to all parts of the body? Even the Yogis, who are far advanced in this science, have not accomplished this, though they are able to make all the other organs of the body, including the respiratory function, inactive. The contraction of the heart can never disappear completely because of the inherent rhythmicity of its muscle. The knowledge of this fact, perhaps, led the ancients to believe that the embodied Soul (Jivâtmâ) has his abode in the heart. In fact, this rhythmic action of the heart, in the absence of all voluntary and involuntary movements, is the only continuing function that brings them back to the material plane again if they so desire, after, as they say, experiencing and gaining knowledge on the spiritual plane. We have heard stories in which Yogis have buried themselves for a required time extending over days or even months, when every function of their body is held in abeyance even the most important function of respiration. Yet they, too, have to keep the pilot light, in the form of the rhythmic movement of the heart, burning to ignite the flame of life again as they are brought out of their place of burial.

The X-Ray's exposition of the phenomena demonstrated that the suggestion of hypnotic effect is also out of question. The nerve-control theory is perhaps the only one which can explain them. But what nerves are controlled? The central nervous system has very little control over the involuntary muscular fibres such as the muscles of the heart, the intestine, the glandular organs, etc. These nerves are all out of the question. It is only a form of control over the sympathetic nervous system, over which we have normally no control, that can explain all the phenomena shown by Deshbandhu.

We are told by Deshbandhu that he is enabled to do all these feats by Yogic practice and Prânâyâma. This explanation of his, however, is all Greek to us unless we are initiated into this Yogic science and are able to interpret it in terms of modern science with our present knowledge of anatomy and physiology.

In the following pages I am just suggesting an explanation, in terms of modern science, of the phenomena referred to above. There may be other ways of explaining the phenomena, and perhaps better ones. Let there be some food for discussion, for, discussion alone will eventually lead to the truth.

Before I come to my explanations of these phenomena I shall have to digress somewhat into the realm of the Science of Yoga, without which the full significance of my explanation will not be understood.

THE MYSTERIOUS KUNDALINI

CHAPTER I

SCIENCE AND PHILOSOPHY OF YOGA

DEFINITION AND VARIETIES OF YOGA: What, then, is Yoga and what is *Prânâyâma?* If anything abnormal is done by a person, anything beyond the capacity of an ordinary individual, it is generally said to have been done by the Science of Yoga. Before we are initiated into the mystery of this Science of Yoga, it is well to know what Yoga means. The word 'Yoga' is derived from the root "Yuja" to join or to weld together. Just as in welding, two pieces of the same metal are made to become one by the process of heating and hammering, so also in the Yoga of Indian Philosophy, the embodied spirit *Jivâtmâ,* which is a part of the Universal Spirit *Paramâtmâ,* is made to become one with the Universal Spirit by certain physical and mental exercises. There are good many ably written works on Yoga, both in the vernaculars and in English, and each has tried to define Yoga in its own particular way, and I will mention a few definitions. Some have defined Yoga as "self concentration with a view to seeing the soul as it looks when it is abstracted from mind and matter." Patanjali describes Yoga as 'suppression of thought'. Here the word 'thought' must not be understood in the usual narrower sense of reflection, but should be taken to mean consciousness which includes sensibility, imagination and dreams.

A simple definition of Yoga is found in the Bhagwad-Gita, where it is described as equanimity of mind in thought and deed, resulting in efficiency of action, done as service dedicated to God. But the following is a more or less comprehensive definition of the term Yoga. "Yoga is the science, which raises the capacity of the human mind to respond to higher vibrations, and to perceive, catch and assimilate the infinite conscious movements going on around us in the universe." In fact it makes one a transmitting as well as receiving station of radio activity with the mind as the aerial. One can catch and receive the unspoken thoughts of others from any distance. One can also broadcast one's own thoughts to assist others in spiritual upliftment or guide them when they are in difficulty. It is claimed that all the miracles performed by the long line of saints, saviours and sages of all times and in all climes, were due to the knowledge of this, the grandest of all sciences. From the definition given above, we can see that Yoga means the union or the linking together of man with God; or, more correctly, the disunion or separation of man from objects of sense, i.e., from the phenomenal world. It is the science which leads the initiate by easy gradations to the loftiest height of Self-realisation till he stands face to face with the object of his search. This object of his search can be obtained by a variety of ways, either by dedicating all the fruits of work to God—*Karma-Yoga*—or the absolute surrender of all our hopes and aspirations including the self also to God, in the belief that His grace is our highest good—*Bhakti-Yoga*. The highest form of Yoga is that in which the soul does not see itself except as infilled by and made identical with the Absolute God—*Jnyâna-Yoga*. This is enough for our purpose. I need not go deeper into the mysteries of Yoga, but a few words regarding its achievement will not be out of place.

STEPS NECESSARY FOR THE ACHIEVEMENT OF YOGA: Patanjali, the venerable codifier of this science of Raja-Yoga, who flourished in the second century B.C., describes eight steps in its attainment. These are arranged in gradation, each one more difficult to master than its preceding. They are: *Yama*, *Niyama*, *Âsana*, *Prânâyâma*, *Pratyâhâra*, *Dhâranâ*, *Dhyâna*, and *Samâdhi*. I must explain the meaning of these Sanskrit terms and what they include as given in the *Patanjali Yoga-sutras*, i.e., The Aphorisms of Patanjali on Yoga (Raja-Yoga).

YAMA signifies truthfulness, non-stealing, continence, and not receiving of gifts. This first step, though it looks simple, is not possible to practise to a letter.

NIYAMA means cleanliness both external and internal, contentment, study, and adoration of God.

ÂSANA is the third step. It is a posture for contemplation. A posture is necessary to keep the body motionless, lest its unchecked restlessness should disturb the mind and dissipate the energy of the will. It has been shown by experience that the best *Âsana* is *Padmâsana*, i.e., a sitting posture with the legs crossed after the manner of the popular image of Buddha but slightly modified. In this *Âsana*, the left foot is placed on the right thigh and the right foot on the left thigh; the right hand rests on the right thigh nearer the knee. The palm is directed upwards with tips of the thumb and forefinger remaining in contact. The left hand is also similarly arranged and rests on the left thigh, the gaze is directed on to the tip of the nose. This is called the pose of composure, and is helpful in keeping the mind steady. The first two steps mean a moral training of the soul, while the third step is more for the training of the muscles of the body. I may mention here that there are in all eighty-four *Âsanas* or postures mentioned and each has a separate name. Suffice it to say that each *Âsana* is supposed to control certain muscles and nerves of the body. They are also useful as therapeutic measures, for certain diseased conditions and more particularly, for certain chronic ones associated with the nerves and metabolism. Nay, practitioners of the same go still further and aver that diseases like *leprosy* and *epilepsy* can be cured by a postural method called *Sarvânga-*

Âsana which is said to have a soothing influence on the nervous system.

PRÂNÂYÂMA: When the *Âsana* becomes habitual and is no longer a source of distraction to the mind, *Prânâyâma*, the fourth step, can be practised with ease. The word *Prânâyâma,* is practically never used nor ever thought of seriously and its full significance is hardly ever appreciated. The real object of *Prânâyâma* is to control the nerves or nerve centres which cause the muscles of respiration alternately to relax and contract automatically. The breath has very little to do with it, though the art of breathing is one of the means of bringing under control the *Prâna,* i.e., energy or nervous impulse. We know that the respiratory act is under the control of the Vagus nerve, which has two sets of fibres afferent and efferent; stimulation of the first stops expiration and produces inspiration; and stimulation of the second does the reverse. These fibres are excited to action by the alternate collapse and distension of the air vesicles of the lungs where the Vagus terminations are situated. *Prânâyâma*, then, is in effect a process of bringing under control the Vagus nerve, over which, normally, we have no control. One can understand the importance of this control when one knows that all the vital forces are more or less under the control of the Vagus nerve and its centre; and when this is achieved by Yoga, there is said to be nothing in nature that cannot be brought under the control of the performer and all the forces of nature will obey him as his slaves. When the ignorant see these powers of the Yogi, they call these as miracles.

Prânâyâma, then, really signifies the controlling of energy, i.e., the impulses of the autonomic nervous system and the numerous activities of the body caused by them. It prevents the dissipation of energy and directs it along a particular channel at will, as was done by Deshbandhu in stopping the pulse of a particular arm. In its fullest significance, it means the controlling of cosmic energy, that is, life itself.

Popularly, *Prânâyâma* is generally taken to mean the regulation of breath. Dissipated breathing brings early death, while its regulation prolongs life. A Yogi measures the span of his life not by the number of years but by the number of breaths. These statements will bring to the reader's mind the importance of the regulation of breath in the process of *Prânâyâma*.

I must enter into the details of this fourth step, viz., *Prânâyâma*, because it is considered to be the first stumbling block in the attainment of Yoga. Subsequent steps are easy to attain, if one can achieve mastery over the process of *Prânâyâma*. Besides that, breathing is the chief method of absorbing energy from the atmosphere; or it may be put that the lungs are the storehouse of an absorbed atmospheric energy and that they impart it to the rest of the organs. In fact, what the fly-wheel is to machinery, the lungs are to the body. With each breath we inhale a certain amount of electricity or energy from the atmospheric air. This energy is absorbed by the blood and transferred to the nerves of involuntary motion. I have advisedly used the word involuntary. Ordinarily, respiration is an involuntary act, though it can be made voluntary, when we desire to speak, laugh or cry. To gain control, one has to begin by correcting the normal breathing. To do this, one should first of all be conscious of one's breathing. Consciousness of one's breathing forces one to take deeper breaths and makes one absorb larger quantities of atmospheric energy, which is employed to energise the nervous system; to do this, breathing must be of the Yogic character.

We may classify respiration into four types viz., High breathing, Mid-breathing, Low-breathing and Yogic-breathing. High-breathing is what we know as clavicular or collar-bone breathing. In this breathing only the upper part of the chest and lungs, the narrower part, is moved; simultaneously the diaphragm, the partition separating the thoracic from the abdominal cavity, is raised, compressing the lowermost portion of the lungs thus preventing their expansion downwards. In this breathing a minimum amount of air enters the lungs. There is a maximum amount of effort made to obtain a minimum amount of benefit.

Mid-breathing, to which we are normally accustomed is what we call intercostal or thoracic breathing. It is superior to high-breathing, but inferior to low-breathing.

Low-breathing, or diphragmatic breathing, is far better than the two previously mentioned. Western writers have now come to recognize the importance of this breathing and have largely extolled its merits in their Health magazines. In this breathing the movement of the diaphragm plays a very important part. The diaphragm when at rest presents a concave surface to the abdominal cavity and protrudes in the chest like a cone. When it is brought into use, the conical appearance disappears and the diaphragm presses on the abdominal contents and forces the abdomen out. This breathing mainly fills the lower and middle parts of the lungs. In Yogic practice, this breathing even has no place.

In the scince of Yoga, breathing includes all the three modes. The process for this breathing is as follows:— The upper part of the lungs is first filled with air; further by movement of the ribs upwards and outwards air is inhaled to fill up the middle portion of the lungs; and lastly by the protruding of the abdomen and by allowing the diaphragm to lie flat, an additional volume of air is drawn in to fill the lowest part of the lungs. Thus, in Yogic breathing, both the lungs, from the apex to the base, are entirely filled with air at each inspiration so as to absorb the maximum quantity of oxygen and store up the maximum amount of energy—*Prâna.*

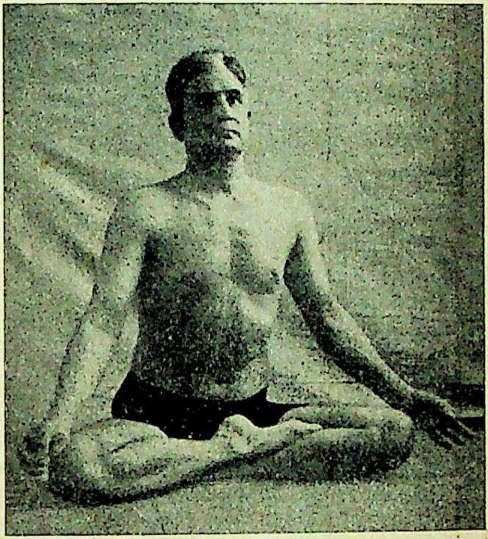
After one has learnt to expand the lungs to their fullest capacity after the manner stated above, the next step is to bring a rhythm into respiration. In Yogic practice the three parts of a respiratory action—inhaling, retention and exhaling—are of equal importance. They always bear a fixed ratio to one another. The maintenance of this ratio is what is to be understood by rhythm. When a complete mastery over this rhythm and full expansion of the lungs is obtained, *Prâna* or energy may be willed into any particular part of the body. The training of the will by *Prânâyâma* gives exercise to the mind, so that, in course of time, it acquires a capacity to respond to the higher vibrations, and becomes what may be called super-conscious; such is the object of *Prânâyâma* in the science and philosophy of Yoga.

This introduction of rhythm into our respiration brings us to the technique of *Prânâyâma*, which is summed up in three Sanskrit words: *Puraka*, *Kumbhaka* and *Rechaka*.

These three combined, form a breath-unit. With one nostril open and other closed, the atmospheric energy is breathed in; this is called *Puraka*. This energy is then retained in the body by the holding of the breath. This is called *Kumbhaka*. After this, the closed nostril is opened and the opened nostril closed and the breath is let out. This is *Rechaka*. The second breath-unit is commenced with the nostril which remains opened at the end of the first unit without allowing any interval. The same order is followed in successive breath-units. The ratio, of the time spent in inhaling to the time during which the breath is held, is generally 1 : 4, and, that in inhaling to exhailing is 1 : 2. The longer the breath is retained, the energy absorbed is more and the power of resistance obtained is greater. Some youths perform the daring feat of allowing a loaded cart to pass over their chests without their suffering any injury or having their ribs broken. The secret of this feat lies in the power of retention of energy in the fully expanded chest till the wheel has passed over the chest. In fact, many feats of physical strength depend on the process of *Prânâyâma.*

A particular *Âsana* or pose is advised for the easy achievement of *Prânâyâma.* This pose is called *Siddhâsana* or the pose of accomplishment. In this *Âsana,* the sitting posture is taken with the head and neck in a line with the straightened spinal column. Further, the sitting posture is to be taken in such a way that the heel of one leg presses firmly on the perineum and the heel of the other leg on the pubis. The gaze in this posture is directed towards the root of the nose between the eye-brows or at the tip of it. A suitable posture and *Prânâyâma* are the two stages necessary to will a thing or a desired object by concentrating the attention with all energy on the object desired. This is what the 'New Thought' literature, which is flooding the market, is trying to teach and this is what Emile Coué of France

Plate II



SIDDHASANA
OR
MULA BANDHA

tells us to do to keep diseases away by concentrating our thoughts on his favourite formula: "Day by day, in every way, I am getting better and better." These thoughts may be new to the western world but to us they are as old as the hills. Here again, a warning is given not to use the power gained by *Prânâyâma* for the attainment of unholy objects, or psychic powers, because then follows an entanglement in the surrounding objects due to keeping the self under bondage to the flesh and the after-effects of these are to be found in the wearing away of these powers and in loss of mental balance. But, when these powers are used for the liberation of the Self from the bondage of the flesh, by curbing evil emotions and unholy passions, the mind overthrows the dominion of matter, and the thraldom of sensual pleasures.

Anyone cultivating spiritual concentration will perceive subtle changes taking place in his nerves and a development of higher faculties takes place in him after *Prânâyâma* is attained.

PRATYÂHÂRA: The next step after *Prânâyâma* is *Pratyâhâra* which means the restraining of the senses from gratification in many ways. Our uncontrolled senses are the root cause of all evils. They freely roam about in the objects of senses and distract the mind which is ever ready to get itself to their objects. Every little sound, sensation, and impression from the organs of sense disturb the peace of mind necessary for the achievement of Yoga. By a control over the senses, we do away with the means that convulse the mind. By a constant practice of withdrawing our senses from the objects of desire, be they internal or external, we force to steady the mind and ultimately make it blank and fit for achieving further steps of Yoga. This step coming after *Prânâyâma* becomes easy of achievement.

DHÂRANÂ, DHYÂNA AND SAMÂDHI: Next comes *Dhâranâ,* i.e., the holding and fixing the mind on certain points to the exclusion of all others, that is, the fixing of the attention on the heart (*Hridaya*) or on an image of God. *Dhyâna* is the next step in Yoga and means contemplation of the Self. When the mind is freed from the thraldom of the senses, it is not allowed to wander outwards but is employed in the contemplation of the Self or *Âtman*. *Dhâranâ* and *Dhyâna* naturally lead to *Samâdhi* which is the state of super-consciousness. It means absorption in meditation either with retention of self-volition (*Savikalpa*) or with loss of volition (*Nirvikalpa*). In this state, the Soul is able to enjoy its own Self, which is Entire Bliss.

SIGNIFICANCE OF THE VARIOUS STEPS OF PATANJALI: The various processes suggested by Patanjali form a royal road for the attainment and realisation of Eternal Bliss. The conscious mind acts as a gate closing this road and one may say that it requires eight keys to unlock it. With the first of these, *Yama,* the flow of the mind is regulated in such a way that it will be purificatory in action and raise the moral tone. Patanjali, to begin with, does not restrict one's actions. He advises action but action in such a way as not to cause injury to others, allows one to receive, but to receive not as a gift for work done, does not restrict speech but advises one to speak the truth, instructs one to hear, but to hear only what is good and urges one to practise courage but to practise it only when in difficulty. In fact, with this key one is able to achieve control of spiritual activities —*Satva-guna*—in the mind. With the second key *Niyama* one is advised to restrict the activity of the mind completely in a particular direction, that is, to abandon any act for which there is a craving, to suppress a particular desire and its manifestation. The third key is called *Âsana.* This controls all the physical activities, the energy of control being utilised in maintaining a particular pose. This is necessary because the unchecked restlessness of the body might otherwise dissipate the energy of the mind. The energy of the mind, controlled by *Yama*, *Niyama*, and *Âsana*, is then directed towards exciting a subtler side of the mind by exercises of rhythmic breathing of a particular order. This key is called *Prânâyâma*. The fifth key is called *Pratyâhâra* by which the activity of the conscious mind is completely restrained from flowing out of the organs of sense. The restrained senses are then directed inwards in search of the subtler or subconscious side of the mind, by concentrating restraint on an organ like the heart, an involuntary organ, which works through the subconscious mind. The sixth key is called *Dhâranâ*. When the attention has been thus fixed on a point in the body, meditation on it is necessary in order to realise the energy through which it is working. The seventh key is known as *Dhyâna*. By continued meditation, consciousness of the subtler side of the mind, the subconscious force in the body, is achieved and the conscious mind becomes merged in it.—The eighth key is *Samâdhi* by means of which one can obtain anything, material or spiritual. If the object be material gain, there is a violent return to the conscious mind in order to gain the object of desire. However if the object be spiritual, a stage called *Nirvikalpa Samâdhi* is entered into, which when attained, all longings are consumed and eternal freedom from this physical world is obtained.

Some of these keys are easy to handle by practice but others have become so rusty by disuse, that they will not fit into the lock and the gate of Liberation will refuse to open. One might, by force of will and practice, attain control over the physical activity, though it is not so easy as it may appear. All voluntary actions are under the control of the cerebro-spinal nervous system over which there is conscious control. It is through this system that we manifest our desires, thoughts and emotions, which are of a subconscious origin. Our conscious activities are more or less results of education

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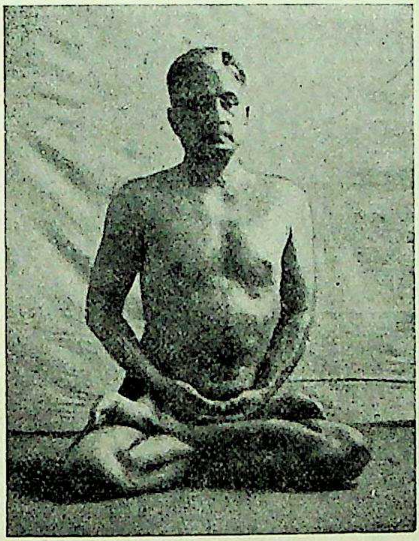
Plate I



PADMASANA

to nervous system to perform certain actions by force of habit. They vary in different periods of life or in succession of lives. Our subconscious activities, on the other hand, are eternal: they are similar in nature in different periods of life, and in all lives past and future. They are only modified by the web of impressions gathered during the period of successive embodiments. The subconscious is the presiding deity of the body; it is forceful in its action and is perpetual.

So far I have explained the different steps necessary for the attainment of Yoga, and their significance. Of these steps, *Dhâranâ* is an important step from the medical point of view. A Yogi, when he is in this state, develops what he calls an internal vision, and is able to see what is going on in his body or in nature not perceived ordinarily. In fact, everything in nature is an open book to him; there are no secrets left to him. He sees into his body, how the different organs work, how *Prâna* or the vital force is transmitted in the body, how it encounters different Chakras (plexuses of nerves); how, with the holding of *Prâna* in a particular Chakra, the different organs are interfered with, producing activity or sluggishness. All these are recorded by seers as axioms and the happenings are said to be automatic.

CHAPTER II

YOGA PRACTICES

CONTROL AUTONOMIC NERVOUS SYSTEM: Our voluntary nervous system, even, if controlled, would not be helpful in gaining the object of achievement. For, the subconscious force within, under the direction of which the voluntary nervous system acts, would force the impressions it has received during previous embodiments to be liberated. Unless and until one establishes conscious control over the subconscious activities, which are involuntary manifestations of the body including thoughts, desires and emotions, it is not possible to enjoy philosophic Bliss or, in other words, one cannot open the door leading to Liberation.

By suppressing all voluntary and involuntary actions one can bring the working of the body to a standstill. The emotions, desires and thoughts, deprived of their mainspring will not then arise. The mind then, having nothing to work through, has to be directed to higher channels of action to gain its freedom. Control over the autonomic nervous system, which is an unconsciously acting portion of the general nervous system, gives one power to achieve miracles which are known as *Siddhis,* a subject which will be dealt with later. It is enjoined by the scriptures that energy of control should not be wasted in performing the *Siddhis* but should be directed towards the attainment of the Real to gain *Nirvânic* Bliss obtainable by practice of Yoga—the suppression of all thought.

Old Yogic literature, later than Patanjali, explains to us, in detail, how the nerves are distributed all over the body, and how they may be used for the influencing of the different organs which are normally not under our control. In fact, all the physical practices of Yoga are directed towards bringing under control that portion of the nervous system about which as yet we know very little—I mean, the sympathetic nervous system. Whether that system is a vestige of our animal life or the bringing of a new nervous system which, in future, is to play an important part in our existence, is difficult to decide.

Cunningham, in his Anatomy, says, "About the philogenetic relations of the sympathetic and cerebro-spinal elements in the system it is impossible to determine. It will be that the sympathetic system is the representative of an ancient architecture independent of the cerebro-spinal nervous system; or it may be that the corroboration of the spinal nerves and the sympathetics are both consequences of a formation of new organs and structure in the splanchnic area. Examined in every light, it possesses features which effectively differentiate it from the cerebro-spinal system, although it has become inextricably united with it, and subservient to it."

That the Yogis by practice can control the autonomic nervous system is a fact, glimpses into which are given to us by Deshbandhu when he demonstrated the stopping of the pulse of one hand only, while the rest of the arteries were beating. What suspicion could one raise of compression by muscle contraction when he stopped the beating of the most superficially placed artery, the Temporal? Our physiologists cannot explain it. It must be borne in mind that when the radial pulse of one hand was stopped, the circulation in the whole arm was stopped, but when the pulsation in the temporal artery was made to stop, the carotid artery was still beating showing thereby that the controls used by him lay above the Brachial artery in the one case and over the carotid in the other. What are these checks by which a Yogi inhibits action of vital parts of the body? These checks are called *Chakras* by them: in our modern phraseology I should call them plexuses. These *Chakras* are excited to action by *Prâna-vâyu*, that is, these plexuses are stimulated by nervous impulse. I call these various plexuses, nerve-plexuses, not of the central nervous system, but of the automatic nervous system.

A RESUME OF THE AUTONOMIC NERVOUS SYSTEM: A resume of the autonomic nervous system will not be out of place at this stage. As slightly antagonistic fibres arise from the sympathetic ganglia (collections of nerve cells) located in the body and from ganglia situated on some of the cranial nerves, it has been considered proper not to extend the term sympathetic to the latter but to call them para-sympathetic and to include both these terms, sympathetic and para-sympathetic, under the common nomenclature of the Autonomic System as suggested by Langley. The word autonomic indicates that these fibres possess a certain power of self-government and are to some extent independent of the central nervous system.

The sympathetic chain is a system of ganglia vertically arranged on both the sides of the spine and called vertebral or lateral ganglia. In connection with lateral ganglia there are other outlying ganglia, placed in front of the vertebral column, from which various sympathetic plexuses take their origin, and these are called prevertebral or collateral ganglia; while there is a third set of ganglia situated in the walls of the organs themselves and called terminal ganglia. All these three sets of ganglia, with strands connecting them together, ultimately gain connection with the spinal nerves and pass through them and the blood vessels for distribution to the skin, blood vessels, glands and abdominal and pelvic viscera. The purpose of sympathetic activity is to prepare the body for quick and violent reaction to its environment, and consists of acceleration of the heart, dilatation of the pupils and sphincters of the anus and bladder, inhibition of the peristaltic movements of the viscera, and of secretions of the salivary and sweat glands.

The bulbar portion of the spinal cord includes the para-sympathetic fibres, lying for the most part in bulbar portion of Vagus and also to a lesser extent, in the third, seventh, ninth and eleventh cranial nerves; and the sacral portion, consists of fibers, leaving the cord in the nerve trunks of the second, third and fourth sacral nerves. Through the Vagus, by far the most important part of the para-sympathetic system, fibres are supplied to the heart, the bronchial tubes, the gullet, the stomach, the greater part of the intestines and the pancreas. From the sacral portion, the fibres of the nervi-erigens supply some portions of the large intestine, viz., the descending colon, the rectum and the anus, and the genital organs.

The purpose of the para-sympathetic is to slow the action of the heart, increase the activity of the digestive tract, stimulate salivary and digestive secretions and aid the general anabolic activity of the body. The general effect, therefore, is that of conserving the bodily resources and building up a reserve of energy and energy yielding material, to be called upon and used in times of need by the action of the sympathetic.

It will thus be seen that the action of the sympathetic fibres is directly antagonistic to the fibres of the para-sympathetic. In fact stimulation of one set of these fibres, causes inhibition of the other set. Having followed the description given above one can easily understand that the accelerative or the katabolic function is more or less a part of the sympathetic portion of the autonomic system, and the inhibitory or anabolic function, a part of the para-sympathetic, i.e., mainly of the vagus.

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CHAPTER III

TÂNTRIC ANATOMY OF NERVES NÂDIS, CHAKRAS, SHAKTIS

This invites us to investigate, whether or not the ancients had any knowledge of the internal anatomy of the body. Some of the Yogis later than Patanjali, who have described these various exercises to be performed by the student of Yoga for the control of *Vâyu* or nervous impulse, describe in detail, the construction and action of the nervous system. Did they then dissect the human bodies, to find out its internal construction? Certainly their description of the nervous system tallies with our present knowledge of anatomy and physiology. Did they gain this knowledge by some mystic vision? Whatever it may be, the fact remains that the anatomy of nerves given in the Tantric manuals can stand comparison with our present knowledge According to the writers on Yoga there are ten important *Vâyu-nâdis*, i.e. nerves of impulse, without a knowledge of which the process and technique of *Prânâyâma* is not possible. There are many more, but these have the power of carrying impulses (*Prâna-vâhaka*). The following are their names and locations: *Idâ* on the left side of the body; *Pingalâ* on the right side; *Sushumnâ* in the centre of the body piercing the skull and joining the cerebrum (*Brahma-chakra*); *Gandhâri* in the left eye; *Hastajivha* in the right eye; *Pushâ* in the right ear; *Yashaswini* in the left ear; *Alambushâ* in the mouth; *Kuhu* in the penis; and *Shânkhini* in the perineum (*Mulasthâna*). Of these ten *nâdis*, three are the most important and these are *Idâ, Pingalâ,* and *Sushumnâ.* I will describe them in detail in the same way as is done in Yogic literature. But it must also be borne in mind that the rest of the *nâdis,* from their positions, appear to carry impressions to the brain by means of the five senses.

The first is *Idâ*, the location of which is on the left side of the *Meru-danda*, i.e., the spinal column and ends in the right nostril. The second is *Pingalâ* which is on the right side of the spinal column and ends in the left nostril. From this description, it is clear that these *nâdis* cross each other before their respective endings and have their origin, or mouth as it is called, in the plexus of nerves called *Mulâdhâra-chakra* which is situated in *Mulasthâna,* that is, the perineum. I think that the *Mulâdhâra-chakra* is the Pelvic plexus of the sympathetic system. From this description of the *nâdis*, it appears that *Idâ* and *Pingalâ* correspond to the gangliated cords of the sympathetic system, which are situated on either side of the spinal column. At the cephalic end, each sympathetic trunk passes into the cranial cavity, arborises with its fellows of the other side and forms a plexus. Through this plexus the sympathetic trunks gain complex relations with the spinal cord (*Sushumnâ-nâdi*) where it joins the brain. This plexus is called in Yogic literature *Bhrukuti-chakra.*

At the caudal end, both the sympathetic trunks end in the pelvic plexus.

The third *nâdi*, *Sushumnâ*, is centrally situated and passes through the *Meru-danda*, i.e., the spinal column. It originates inside the *Kanda*, i.e., the sacrum which roughly corresponds with the level of the navel.

It runs, up the body, from this point, pierces the *Tâlu* (the base of the skull) and joins *Brahma-chakra* (the plexus of nerves of a thousand branches or the cerebrum). This *nâdi*, as it ascends and reaches the level of *Kantha* (region of the larynx), divides into an anterior and a posterior part. The anterior portion goes towards the *Ajnâ-chakra*, the plexus of command, which is situated between the two eye-brows and joins the *Brahma-randhra* (cavity in the brain). The posterior portion passes from behind the skull and joins the *Brahma-randhra* which is supposed to be a cavity in the brain from which the Yogi liberates his soul. It is this posterior portion that is to be developed by a student of Yogic science.

This description of the *Sushumnâ nâdi* concurs with that of the spinal cord and very nearly or almost accurately. It seems that the ancients had a knowledge of the function of the two parts of the spinal cord, the anterior and the posterior, when one reads it described that the anterior division of the *nâdi* goes towards the *Ajnâ-chakra*, i.e., to a point in the frontal lobe of the brain (the lobe of intelligence) from which are issued the orders to move the different parts of our voluntary muscles, and which is a plexus controlled by our thought. The Yogi is told to develop the posterior portion of the *nâdi*, which governs all sensations and supplies all the vital organs of the body, a portion which normally is not under our control. Of all the ten *nâdis* these three are the principal, and of the three *Sushumnâ* is the most important. The importance of this ***nâdi*** lies in the fact that through it, by certain practices, one can put a stop to the flight of time, by drawing *Prâna* (Vitality) from the *Idâ* and *Pingalâ nâdis*, i.e., by consciously controlling the incessant working of these sympathetic cords, it is possible to put a stop to the katabolic activity of the body. This conscious control over them, which could only be achieved through the *Sushumnâ nâdi*, suspends the general wear and tear of the tissues of the vital organs, and helps in the prolongation of life. When the *Idâ*, and *Pingalâ nâdis* are thus devitalised by the *Sushumnâ nâdi*, there is said to exist no night or day for a Yogi. *Sushumnâ* is said "to devour time."

It is also through this *Sushumnâ nâdi* that we obtain knowledge of our relations with the external world. But a knowledge of the self and a control of the vital organs can only be achieved by consciously controlling the *Idâ* and *Pingalâ nâdis* which form a connecting link between the prevertebral plexuses (*Chakras*) of the sympathetic system and spinal cord (*Sushumnâ nâdi*).

All these plexuses, in order to excite *Sushumnâ nâdi* by their connection with it, must work through the *Kundali-chakra.* In fact, what the brain or medulla is to the central nervous system, *Kundali-chakra* is to the sympathetic system. Normally, the central nervous system is well developed as regards its response to external stimuli while the sympathetic nervous system lies dormant. When the latter is made active by *Prânâyâma* and by certain other processes prescribed in the Hatha-Yoga, a person develops the power to do certain things which are beyond the scope of an ordinary individual. Actions done by these persons are regarded as miracles, though to a Yogi they are not so. They are due to a latent power within but it requires to be converted into active energy. A Yogi, when he develops his autonomic nervous system, becomes so engrossed that the somatic functions of his *Sushumnâ nâdi,* and the knowledge of his relations with the external world are held in abeyance and he sees his Self pervading the whole universe and becoming one with it.

Before actually defining *Kundalini* in terms of our present knowledge of anatomy, one should like to name the six important Lotuses or *Chakras* (Plexuses) with their present anatomical equivalents.

THE CHAKRAS — THEIR LOCATION AND WESTERN ANATOMICAL EQUIVALENTS: The *Chakras* mentioned in the Tantric literature are six in number. These are independent units carrying on their assigned function. Each *Chakra* has *Shakti* controlling its own activity. In addition to these independent *Shaktis* of each *Chakra* there is a universal *Shakti* which has the power of controlling all these *Chakras* mentioned above. In the physical form she is lying dormant and coiled up like a serpent in an individual. When this is awakened by Yoga practices the individual gains for himself the power of performing miracles.

The lowermost *Chakra,* with which *Kundalini* forms a connection and through which it is able to send impulses, is the Basic-plexus called the *Mulâdhâra-chakra.* It has four branches (*Dala*) and the shape of a triangle, or, in the words of the *Garuda-Purâna* the shape of the pudendum pubis (*Bhaga*). This description tallies very accurately with the description of the Pelvic plexus of the autonomic system, situated near the sides of the rectum. It is a continuation of the hypogastric plexus which bifurcates below into two lateral portions to assume the shape of a tringle; and by contemplation of this *Chakra* the Yogi obtains freedom from disease, knows the past and the future and gains all psychic powers. It also forms connections with the *Swâdhisthâna*—the chakra which is situated in the pelvic region or *Guhyadesha,* just on a level with the root of the penis and is probably the hypogastric plexus. The *Swâdhisthâna-chakra* has six petals or branches. By contemplation of this, freedom from death and disease is obtained. Higher up still, *Kundalini* forms herself into a plexus, which is known as the *Kundali-chakra* or solar plexus and its location is in the region of the navel. Its direct extension upwards is called *Manipura-chakra,* which can be identified with the plexus of the Coeliac-axis. The proximity is so great that no distinction is made between the *Kundali* and *Manipura-chakras.* The *Kundali-chakra* is discribed to be of a red colour and to have ten branches. It is called the Lotus of Happiness. By contemplation if this *chakra*, a Yogi is able to enter into the body of another person; he obtains the power of transmuting metals, of healing the sick, and of clairvoyance. After passing through these *Chakras* the *Kundalini* forces its passage through the *Anâhata-chakra* which has twelve branches and is located in the *Hridayadesha*, i.e., the region of the heart. This description appears to identify itself with that of the Cardiac plexus of the sympathetic system. By contemplating this Lotus, a Yogi becomes clairvoyant and clairaudient and is able to see adepts moving in the air, and gains the power of travelling at will to any part of the world by the exercise of his volition. Of the six important lotuses or plexuses the one situated in *Kantha* the region of the throat (*Pomum Adami*), known as *Vishuddhi-chakra*, has sixteen petals or branches. It is probably the pharyngeal plexus of the sympathetic; and it is said to be the lotus of purification. By contemplating this lotus, the whole body is purified of diseases and ailments and a Yogi is able to live a thousand years in eternal youth. In fact, he is dead to all the outer world, and becomes absorbed in his inner life. The power behind a malediction of a Yogi also depends upon the command of this lotus. Abstract scientific men are likely to laugh at the various powers assigned to the different plexuses. Still, we have read of things in the ancient Vedic and classical literature which have been proved to be true. Reality of these achievements of a Yogi, time alone would show.

Kundalini then passes to the *Talukâ-chakra,* i.e., the cavernous plexus of the sympathetic system which is situated at the base of the skull, and thence joins the *Ajynya-chakra.* This *chakra* is the Naso-ciliary extension of the cavernous plexus of the sympathetic through the ophthalmic division of the fifth cranial nerve, ending in the ciliary muscles of the iris and at the root of the nose, through the supra-orbital foramen. It has two petals or branches and is situated between the eye-brows. It is the spot which is contemplated while undergoing the process of *Prânâyâma.* Here is found the great light, the third eye as it is called, and by contemplation of this a Yogi gains wonderful psychic powers. This *chakra* is called the plexus of command.

THE SHAKTIS CONTROLLING THE CHAKRA: As I am on the subject of reflex centres, I should like to say a few words about the *Shaktis* that are said to preside over the six important plexuses (*Chakras*) of the sympathetic portion of the autonomic nervous system. Every *Chakra* is said to have its subsidiary *Shakti* in addition to the general *Shakti*—*Kundalini*—which rules all the *Chakras*.

The *Shakti* of a *Chakra* exerts an inhibitory influence through a subsidiary nerve centre in the spinal cord, and controls unconsciously the activity of the organs excited by fibres of the sympathetic plexuses.

The *Mulâdhâra-chakra* (the pelvic plexus) and the *Swâdhisthâna-chakra* (the hypogastric plexus) have '*Dâkini*' and '*Râkini*' respectively as their controlling *Shaktis*. These *Shaktis* are comparable with the efferent impulses generated through the subsidiary nerve centres in the lumbar region (*Apâna-prâna*) along the fibres of the pelvic nerve, otherwise called nervi-erigens. This nerve is chiefly concerned with the stimulation of the external organs of generation (whence its name "nervi-erigens"). It also sends out fibres to the musculature of the colon, rectum and bladder.

Manipura-chakra (the plexus of coeliac-axis) is ruled by the *Shakti* '*Lâkhini.*' She is said to be four-armed. This *Shakti* is the efferent impulse generated along the three or four splanchnic nerves through the auxiliary centres in the thoracic lumbar region of the spinal cord (*Samâna-prâna*). These nerves send inhibitory fibres to the stomach and the intestine and also to the secretory, and sensory fibres to the abdominal organs.

The *Shakti* presiding over the *Anâhata-chakra* is *'Kakini.'* This *Shakti* is the efferent impulse generated along the fibres of the thoracic-spinal nerves through a subsidiary centre in the upper thoracic region of the spinal cord. These fibres control the heart, the lungs and aorta. The main nerve regulating the functions of the heart, the lungs, and the aorta is the vagus, which has its centre in the medulla oblongata. But now it has been proved, that even if both the vagi are cut, so as to do away with the controlling influence on these organs, a preliminary state of excitation occurs which is brought about by the sympathetic coming into action producing acceleration for a short time. This acceleration is immediately followed by the normal automatic working of these organs, showing thereby the possibility of another controlling nerve centre in the spinal cord just below the medulla (*Prâna*-reflex).

Vishuddhi-chakra is presided over by the *Shakti* *'Shâkini.'* This is the efferent impulse generated by the cervical nerves and also by the branches of the Vagus through the nerve centre in the medulla; both the above *Shaktis* are located in the region of *Prâna* proper. This *Shakti* is said to reside in the region of the moon, which appears to me to be the ventricular cavity in the brain. It is also said that the nectar (the cerebro-spinal fluid) is constantly dropping on the head of this *Shakti* and that she is seated on the bone, i.e., on the superior surface of the base of the skull.

The last *Chakra, Ajnâ,* is controlled by the *Shakti 'Hâkini,'* i.e., the efferent impulse generated along the fibres of the oculo-motor nerve through a centre in the thalamus. This *Shakti* is said to reside in the marrow (*majjastha*) of the brain. Elsewhere, it is said to reside in the *Chakra* (*Chakrâstha*), i.e., *Brahma-chakra* which we know to be the cerebrum. It is said to be white in colour. So is the thalamus, the sensory basal ganglion in the brain.

CHAPTER IV

KUNDALINI—ITS LOCATION AND FUNCTIONS

The excitement of all the *Chakras*, mentioned above takes place always through *Kundalini*. It is the lever of consciousness by which the individual realises his oneness with the Absolute. The creative impetus, which emanates from the divine, is communicated through *Kundalini*, the serpent power as it is called, to the six *chakras* or plexuses and their connection. Normally, *Kundalini* is sleeping a trance-sleep (*Yoga-nidra*), and when it is awakened from this slumber and made to work, the Yogi perceives all supernatural truths. The resurrection of the soul from the grave of untruth becomes an actual fact, and perception of beauty, which is an attribute of the Self, fills the heart with joy. Health is also said to be the gift of *Kundalini*; *Kundalini* is the mother of joy, of sweet rest, of sleep, of faith and of wisdom. *Kundalini* is the queen and guide of lives that breathe, i.e., of all vertebrate animals. What is this *Kundalini* which is a prime-mover of the practice of a Yogi and to which such wonderful powers have been attributed? *Kundalini* has long remained a mystery. In the following pages I propose to attempt an explanation of this mystery in terms of modern science.

Swami Vivekananda, in his book ***Raja Yoga***, defines *Kundalini* as follows: "The centre where all residual sensations are, as it were, stored up is called *Mulâdhâra-chakra*, and the coiled up energy of actions is *Kundalini*, the coiled up."

Arthur Avalon, in his book, *The Serpent Power*, states that "*Kundalini* is the Static *Shakti*." He says further: "It is the individual bodily representative of the great cosmic Power (*Shakti*) which creates and sustains the universe"; and in support of his statement he gives at the end of the book the scientific and masterly exposition of this *Shakti*, composed by his friend Prof. P. Mukhopadhyaya. All the explanations about this *Shakti*, though learned, could as well be applied to the autonomic nervous system. The static or anabolic power is the para-sympathetic portion of it, and the Dynamic or Katabolic power is the sympathetic portion. Some have suggested that *Kundalini* is the inferior Venacava, while others conjecture it to be the large bowels. On what basis these conclusions have been arrived at, I am unable to conceive.

According to *Hatha-Yoga-Pradipikâ*, the *Kundalini* is said to be lying dormant guarding the opening of the passage that leads to the seat of Brahma. This seat is said to be *Brahmarandhra*, that is, the ventricular cavity in the brain. The passage to that cavity, in my opinion, is the narrow space at the lower end of the fourth ventricle in the brain, which communicates the ventricles of the brain with the channel in the spinal cord (*Sushumnâ nâdi*) and the subarachnoid space (*Akâsha*). The dormant *Kundalini* thus guards the three important openings in the cerebro-spinal nervous system. Unless she is awakened, or made consciously active, one cannot send one's embodied soul (*Jivâtmâ*), which is supposed to reside in the heart (*Hridaya*), along the *Sushumnâ nâdi* to the *Brahma-randhra* nor is he able to assist the soul captured in the *Randhra*, to be freed to join the Universal Soul (*Paramâtmâ*) outside.

Likewise the *Kundalini* is said to be sleeping above the *Kanda;* and the shape of the *Kundalini* between these points has been described as being like a serpent. To understand the exact extent of this *Kundalini* we must determine the position of the *Kanda* in the body. Different authors have given slightly different locations of this *Kanda* but they all agree that it is placed in the lower part of the body but above the anus, and that its size is about four *angulis,* i.e., about three inches in length, and an equal number of inches in breadth; that it has the shape of of a leaf or triangle, or that of a bird's egg, broad above and narrow below, and that it is covered with a soft, flimsy, plaited, white cloth.

According to *Goraksha-shataka* the situation of the *Kanda* is on a level with a point between the umbilicus and the penis. That point corresponds to the upper border of the triangular piece of bone at the lower end of the spinal column which is wedged in between the two hip bones and is known as the sacrum, the upper border of its front surface is known as the promontory of the sacrum.

By *Yanya-Valkla,* the *Kanda* is located about nine *angulis,* i.e., six inches above the mid-point of the body and extends about four *angulis* in length and width. The mid-portion of the body is said to be the space which is two *angulis* (a little over an inch) above the anus, and an equal number of *angulis* below the root of the penis. This space, according to our knowledge of anatomy, corresponds with the Coccyx, the lowest bone of the spinal column. A distance of nine *angulis* above this space corresponds with the promontory of the sacrum. In *Hatha-Yoga-Pradipikâ,* the origin of *Kanda* is given as twelve *angulis*, i.e., nine inches above the raphe of the perineum and that too corresponds with the promontory of the sacrum.

Though the different manuals on Yoga describe the location of *Kanda* in different terms, they agree as to its root being a point between the navel and the external genitals.

This *Kanda* is also called *Mula-Kanda* or *Mulâdhâra,* that is root-bulb or root-support, probably of the *Meru-danda.* This *Mulâdhâra* is said to be the receptacle of a plexus or a *Chakra* called *Mulâdhâra-chakra;* it is also said to form the backward limit of the Yoni (perineum). The soft white plaited cloth with which it is said to be covered is, I believe, well represented by pelvic fascia with its folds which lines the internal surface of the sacrum (*Kanda*).

Kanda, thus, could be identified with the sacrum, though it is translated to denote 'ganglia' in some of the Marathi and English books on Yoga. *Kundalini* at the site of its origin, which is above the promontory of the sacrum, is said to be lying dormant in the shape of a serpent coiled up. Lower down it joins the *Mulâdhâra-chakra* which is at the end of the *Kanda* (the sacrum). Higher up, it passes through the different *chakras* and meets the brain through an opening in the *Tâlu* (the base of the skull). A fuller account of these *chakras* will be given presently.

In the Tantrik Manual, *Shat-Chakra-Nirupanam,* it is said that the pericarp of the *Âdhara* lotus is a triangle or *Kanda* mentioned in the *Hatha-Yoga-Pardipikâ.* Inside this triangle there is a linga or phallus called *Swayambhu,* which tapers like a new unopened leaf-bud. This description of the phallus well applies to the lower end of the spinal-cord with its dural sheath, which ends in the canal of the sacrum (*Kanda*) blindly in a cul-de-sac at the level of the second sacral vertebra. This phallus extends a little beyond the triangle. Above it, on a level with the lower end of the spinal canal (*Chitrâ*), the *Kundalini* is said to be sleeping, closing the mouth of the *Brahmadwâra.* This position of the sleeping *Kundalini* is about the same as the position of the lower end of the dormant *Kundalini* mentioned in the *Pradipikâ.*

It appears from the description and position of the dormant *Kundalini* that it must be a prevertebral plexus of the autonomic nervous system; and that plexus I take to be the Solar plexus of the sympathetic which lies on the vertebral column on a level with the first and second lumbar vertebræ, where the lower end of the spinal-cord, called the Conus-medullaris, with its canal comes to an end. Extending from this sleeping *Kundalini*, otherwise called *Kula-Kundali*, a fibre is described which descends and shines like a chain of brilliant lights in the cavity of *Mula-lotus*. From the skirts of this dormant *Kula-Kundali* there starts another *Kundalini*, which ascends along the *Sushumnâ nâdi* and reaches, as said elsewhere, to a point (*Bindu* or *Para Shiva*), which is bathed in the stream of the ambrosia (Cerebro-spinal-fluid) from the Eternal Bliss (*Brahma-randhra*), and illuminates even the lowermost cavity of this bodily universe by her radiance.

It will thus be seen that *Kundalini* extends from the brain to the *Mulâdhâra-chakra* and is divided into two parts by the *Kula-Kundali* which rests on the lower end of the spinal canal *Brahma-dwâra* or the gate of *Brahma*.

Whether the *Brahma-dwâra* should be taken to mean the lowermost ends of the spinal canal, or its uppermost end where it joins the *Brahma-randhra* or whether it should be taken to mean the whole of the spinal-cord, by which the *Kundalini* as a conscious force is made to ascend to the *Sahasrâra*, is decided by the description given in the *Shat-Chakra-Nirupanam*, where it is said that the *Kundalini* in the lower gateway of Brahma is in a sleeping or inert state and at the upper gateway of Brahma it resides, in an active state capable of being stimulated. Thus these two points, the upper and lower gateways of Brahma, define the limits of the *Kundalini* or the *Parameshwari* of lives that breathe.

When this *Kula-Kundali* is awakened or made active, it forces a passage through the different *Chakras* and excites them to action, and, as it rises step by step, the mind becomes opened and all visions and wonderful powers come to a Yogi, when it reaches the brain. The Yogi then is perfectly detached from the body and the mind, and the soul finds itself free in all respects.

Kundalini then joins her lord *Para-Shiva* (the olivary body) who has the form of a dot "O" (*Bindu-rupâ*) and is situated in the *Itara-linga* (medulla oblongata) which has as its pericarp cerebrum (*Brahma-chakra*). *Kundalini* thus connects herself with *Brahma-randhra*, a cavity in the brain, where the Brahma or the Soul, is located, and the knowledge of which the Yogi seeks to attain. It is this cavity which is guarded by six doors, and *Kundalini* is the only force that can open them. It is this cavity, where *Prâna* centres all its activities; it is here where the soul is carried to reside; it is here that the unruly *Chitta*, the mind-stuff, is captured and made steady by the process of *Prânâyâma;* it is here that the *Chitta* is submerged in *Prâna,* this submersion bringing all the activities of the mind and *Prâna* to a standstill. The soul, thus made free from the thraldom of the intellect, feels its own joy and sees itself "*So'ham,*" i.e., "I am That" or "I am He," literally "That am I." It is only when the mind and the *Prâna* act as two conflicting entities that they run riot and keep the soul in the bondage of the *Mâya,* the surrounding objects of the senses. Though the soul is freed from the shackles of *Prâna* and *Chitta,* it is still made to remain there by the current of *Vâsanâ,* which is guarding the orifice of this cavity in the form of *Kundalini,* the cord of desire. These desires revert the soul to the control of *Prâna* and *Chitta* (the mind-stuff), and successive rebirths are the result. This is anything but what the Yogi desires; he wants to escape this, which can only be done by tearing asunder the cords of desire by bringing *Kundalini* under control. (When *Kundalini* is made to obey the callings of the soul, the soul escapes from this cavity to occupy another cavity called *Akâsha,* which surrounds the brain and the spinal-cord. Further the soul, freed from the control of *Prâna*, *Chitta* and *Vâsanâ,* lives outside the *Brahma-chakra,* the cerebrum, and is said to pervade the whole universe. When the Yogi attains this state, he is said to be in the *Nirvikalpa Samâdhi,* seedless *Samâdhi* by which he gets in tune with the Infinite and escapes rebirths.

A question may be asked as to what we are to understand by the term *Vâsanâ* which leads an individual to successive rebirths. To know the proper meaning of the term, according to Indian Philosophy, we shall have to deal with *Karma* of the embodied soul, the *Jivâtmâ* of a being. *Karma* of an individual is comprised of desire (*Vâsanâ*), knowledge (*Jnâna*), and action (*Kriyâ*). The impressions unconsciously left on the mind by actions in past lives (*Vâsanâ*) start a current of thought, which is conveyed to the *Jivâtmâ* and is then translated, through his agency, into actions, good or bad. Our good actions lead us to happiness while the bad ones to misery. *Karma* is of three kinds. *Sanchita Karma*, the outcome of *Sanskâra* (impressions of past lives) and desires (*Vâsanâ*), is all the accumulated and unexhausted *Karma* of past lives with which an individual is born and which is still to bear fruit. *Prârabdha Karma* is that part of the *Sanchita Karma* which is worked out and the result of which is made known to us in our present birth. *Kriyamâna Karma,* either *Vartamân* or *Âgâmi*, is that which a man is continuously hoarding up by his present and future actions. It will thus be seen that the vicious circle of *Vâsanâ*, by continuously forming a web around the soul, forces it to remain embodied for liberating and experiencing the past *Karma*. Its final emancipation then could only be achieved by putting a stop to the generation of new *Karma* by conquering our *Vâsanâ* or desires. When this is done there is nothing left to generate new *Karma*, and the *Jivâtmâ* is liberated from successive births. On the physical plane, this can only be done by controlling the cord of desire, the Vagus nerve (*Kundalini*), by consciously controlling all the involuntary actions of the body, which are in some sense or other under the control of the Vagus nerve. By submersion of the voluntary and involuntary actions of the body into *Chitta* and *Vâsanâ* all the functions of the body are brought to a state of automatism. Finally the embodied soul (*Jivâtmâ*), freed from the activities of the body, merges into the Supreme Soul (*Paramâtma*) outside the body and gains its final emancipation, i.e., liberation from re-birth.

All the writers on Yoga have translated *Randhra* as a 'hole.' It could as well be translated as a 'cavity' (Apte's Sanskrit Dictionary), and I would rather put that second interpretation on the word "*Randhra*" as it is more in keeping with our knowledge of Western Anatomy. This cavity is surrounded by a *chakra* or plexus of a thousand branches, known as *Sahasrâra* or *Brahma-chakra*, the cerebrum. Here the word thousand should not be translated too literally. It is there to convey the idea of innumerableness. This *Randhra* is the inter-communicating cavity of the four ventricles of the brain and is continuous with the central canal (*Chitra*) of the spinal cord (*Sushumnâ nâdi*). This cavity is constantly secreting a fluid called the Nectar of Life or the divine fluid, the cerebro-spinal fluid. At the end of this cavity is an orifice which connects the internal cavity of *Prâna* with the external cavity of *Âkâsha* surrounding the brain and the spinal cord and known as the sub-arachnoid space, and is bathed with the divine fluid which is secreted by the *Brahma-randhra*.

CHAPTER V

KUNDALINI (*Contd.*)

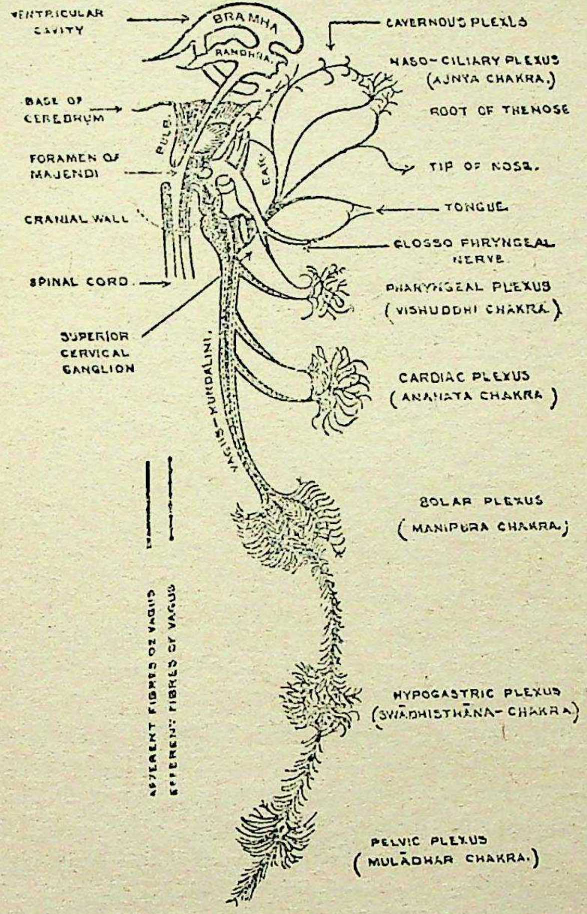
IDENTIFIED WITH RIGHT VAGUS NERVE

The attributes of *Kundalini* given above could only be true if it were a nerve which, when excited, carries impulses to the various plexuses just mentioned. These, in their turn, throw out filaments to the spinal-cord (*Sushumnâ nâdi*), at their various levels, to get the knowledge of their working. What nerve in the modern anatomy could adequately represent *Kundalini* to justify the importance given to it by the Yogi? None but one of the cranial nerves could do it. Of such nerves there are eleven pairs; and of these, one of the longest reaches the level of the umbilicus where it ends in the Solar plexus (*Kundali-chakra*) and further gains connections through filaments with the other plexuses situated lower down. That pair of nerves is the Vagi, popularly called by English authors "The wandering nerves." It forms the bulk of the para-sympathetic portion of the autonomic nervous system.

To our mind *Kundalini,* interpreted as the serpent power, is the Vagus nerve of modern times, which supplies and controls all the important vital organs through different plexuses of the sympathetic portion of the autonomic system. A few have tried other interpretations of *Kundalini* but, none, to my knowledge has interpreted it in this way. Here we will try to trace the course of the Vagus nerve and its communications with the different plexuses of the sympathetic system and compare it with the course of *Kundalini* as given in the books on Yoga.

THE VAGUS NERVE, ITS SOURCE AND FUNCTIONS: The Vagus or Pneumogastric, the tenth cranial nerve as we know, is connected with hind-brain. It arises with other cranial nerves (the ninth and eleventh) from the grey matter in the floor of the fourth ventricle. Here it is attached by eight or ten filaments to the medulla oblongata in the groove between the olive and restiform bodies. At the level of the Jugular foramen at the base of the skull the Vagus nerve presents a well marked swelling called the ganglion of the root of the Vagus (Jugular ganglion). This ganglion sends a branch to a plexus which is situated at the base of the skull and is known as the carotid plexus (*Talukâ-chakra*). A little lower down, it presents another swelling called the ganglion of the trunk of the Vagus, ganglion nodosum; and further downwards the nerve passes vertically along the spinal column through the neck, chest and abdomen, where it ends into a plexus and forms connection with the solar plexus.

On its course downwards and before it ends, it sends branches to the prevertebral plexuses of the sympathetic portion of autonomic nervous system. In the neck, it sends a branch to the pharyngeal plexus (*Vishuddhi-chakra*); in the thorax it sends branches to the deep and superficial cardiac plexuses (*Anâhata-chakra*); in the abdomen it forms connections with the plexuses


VENTRICULAR CAVITY
BRAMHA
RANDHRA
CAVERNOUS PLEXUS
NASO-CILIARY PLEXUS (AJNYA CHAKRA.)
ROOT OF THE NOSE
BASE OF CEREBRUM
PULB.
FORAMEN OF MAJENDI
EAR
TIP OF NOSE.
TONGUE
CRANIAL WALL
GLOSSO PHRYNGEAL NERVE
SPINAL CORD
PHARYNGEAL PLEXUS (VISHUDDHI CHAKRA)
SUPERIOR CERVICAL GANGLION
VAGUS-KUNDALINI.
CARDIAC PLEXUS (ANAHATA CHAKRA)
SOLAR PLEXUS (MANIPURA CHAKRA.)
AFFERENT FIBRES OF VAGUS
EFFERENT FIBRES OF VAGUS
HYPOGASTRIC PLEXUS (SWĀDHISTHĀNA-CHAKRA)
PELVIC PLEXUS (MULĀDHAR CHAKRA.)

Plan showing the origin, connections and the arrangement of the Afferent and Efferent Fibres of the Vagus Nerve.

of the coeliac-axis (*Manipura-chakra*), and then ends in a plexus known as the solar plexus (*Kundali-chakra*) which is the downward extension of the *Manipura-chakra*. The Vagus also has filamentous connections with the renal, hepatic, splenic and pancreatic plexuses.

The Vagus is the only nerve which is composed of motor and sensory fibres, both efferent, i.e., outgoing and afferent, i.e., incoming. The efferent or inhibitory are anabolic in action while the afferent or acceleratory are katabolic in action.

The efferent fibres, which exercise a restraining influence over the action of larynx, pharynx, lungs and heart, start from the medulla oblongata and are always, according to the manuals of Yoga, kept in action by the divine fluid (the cerebro-spinal fluid) which is secreted by the moon in the brain—very likely referring to the lateral ventricles from their resemblance to the shape of the crescent moon. These fibres originate from the cells of the ganglion nodosum, but as they enter the bulb, the fibres bifurcate. The ascending branches are short and arborise with the efferent fibres of the bulb above. The descending branches go downwards from the centre of the Vagus nerve and form connections with the fibres of the sympathetic in the Solar plexus. The afferent fibres of the Vagus have their source in the Solar plexus, and its two semilunar ganglia called the abdominal brain, and reach the vagal centre in the medulla.

From this description of the arrangement of the fibres of the Vagus, it will be seen that the stimulation of the Vagal centre either directly or indirectly activates both sets of fibres. It will stimulate the inhibitory action of the efferent fibres and put under restraint the functions of the organs supplied by them such as those of the heart, the lungs, and the larynx; simultaneously with this phenomenon, it will stimulate the accelerating action of the afferent fibres and excite the functions of the organs supplied by them such as those of the stomach and the intestine and also cause dilatation of the blood vessels of the abdominal viscera with consequent increase in the secretion of the digestive glands in the abdominal cavity. The depression of the Vagal centre will produce just the opposite effect in the functions of the organs supplied by the afferent and efferent fibres. Thus there will be a see-saw action, as the Vagal centre is stimulated or depressed. From the facts just mentioned, it could be seen that to ensure perfect inhibition of the functions of organs in the thoracic and abdominal cavities, one must stimulate and depress the efferent and afferent sections, respectively, of the Vagus at their source. Normally the activities of the Vagus are automatic and unconscious. If, however, it is possible to bring it under control of the will, one could then achieve everything that is said about the "awakened *Kundalini*," in the foregoing pages. Is it possible to establish voluntary control over the sources of the afferent and efferent fibres of the Vagus? In the Yogic literature, methods are suggested to secure such a control. It is further suggested that if they are pursued practically and rigidly, a student of Yoga attains to the powers of performing the so-called miracles; and when he utilises these powers, he enables himself to force open the door of Liberation (*Mokṣha*).

Through an impulse along the afferent nerves from the larynx, the lungs and the mucous membrane of the nose, it is possible to stimulate reflexly the Vagal centre. In an earlier part of this book, while dealing with the object and technique of the *Prânâyâma,* it has been shown how these organs are made use of by a Yogi to influence the Vagal centre. The greatest difficulty is, however, experienced in controlling the afferent fibres of the Vagus, which have their centre in the Solar plexus and from where the afferent fibres pass upwards in the body of the Vagus. This part of the Vagus (*Kundalini*) is described as lying curled up and dormant, breathing rhythmically. It is called in Yogic literature the "sleeping *Kundalini.*" A student of Yoga is advised to rouse this sleeping *Kundalini* forcibly by catching her tail by various processes of *Prânâyâma* and *Prânâyâma* with *Bandha* and *Mudrâ* (vide infra). By a constant practice of these processes, both the Vagal centres, upper and lower, are made susceptible to the commands of the will; thus a Yogi establishes a voluntary control over them, so as to stop the activity of such organs as are ruled by the autonomic nervous system.

The Vagus nerve may thus be divided into three parts. The first portion in the medulla is composed of efferent fibres and is situated at the lower part of the fourth ventricle of the brain, and corresponds with the mouth of the sleeping *Kundalini.*

The second portion, from below the base of the skull down to its connection with the solar plexus, is composed of afferent and efferent fibres. It is curved in shape and corresponds with the body of the *Kundalini.*

The third and the last portion, composed mainly of afferent fibres, connects the hypogastric (*Swâdhishtâna*) and pelvic (*Mulâdhara*) plexuses with the body of the *Kundalini* through the intermediary of the Solar plexus. This is said to be the tail of the *Kundalini* (see fig.).

It will thus be seen that the description of the Vagus and its connections with the important plexuses of the sympathetic, runs parallel with the description of the *Kundalini* and her connections with the *Chakras.* These plexuses of the sympathetic system send communicating branches to the posterior nerve-roots of the spinal cord (*Sushumnâ-nâdi*) which in its turn is connected by centripetal fibres to the brain (*Brahma-randhra-chakra*)the seat of all knowledge. These anatomical connections complete a cycle. This completion of a cycle may be brought about at any level of the body corresponding to the situation of the plexuses of the sympathetic system, and a desire to control any of the plexuses by means of the Vagus may bring about inhibition in the functions of the organ supplied by that particular plexus. It is on this assumption that we can explain some of the miracles performed by a Yogi. A Yogi, through the Vagus, or more accurately through the Vago-sympathetic nerve, either by direct or reflex action, more particularly the latter, establishes a complete control over the unconscious automatic action of the involuntary muscular fibres. This is what a Yogi desires, so that the normal automatic action may not interfere with his desire of becoming one with Him who is all-pervading. According to the science of Yoga, the brain is not the beginning of all the nerves but the end, where the sum of all impressions of nerves is stored up. The brain is, therefore, called the Lotus of a thousand patals, and, as these petals surround the cavity from which the soul is liberated, it is also called the *Brahma-randhra-chakra*.

KUNDALINI CORRESPONDS TO THE RIGHT VAGUS NERVE. In spite of my having shown above that the wonderful and mysterious *Kundalini* of the Yogic literature is the Vagus nerve of modern science, we are faced with a difficulty. We know that there are two Vagi, the right and the left, while the Yogic literature refers to one only. Is it possible that the writers of Yogic science were ignorant of the second? Want of knowledge of its existence is hardly conceivable in the face of very accurate descriptions of the sensory nerves.

Perhaps they knew that one of the Vagi was not as powerful as the other, and could not form connections or pierce through all the important plexuses mentioned by them. Our present knowledge of anatomy tells us that of the two Vagi the left Vagus is not so plentifully supplied with efferent fibres as the right and plays only a very minor part in the formation of the Solar plexus and of plexuses situated below it; while the right Vagus nerve, through its hypogastric branch, gains a direct connection with the solar plexus and the plexuses situated below it. The stimulation of the right Vagus nerve at its central connection, can control the activities of all the six plexuses of the sympathetic system, containing as it does the most important part of the para-sympathetic portion of the autonomic nervous system.

The mention of *Kundalini* in the Yogic literature in the singular number makes us believe that it must be the right Vagus nerve only and not the left. Even though it is accepted that *Kundalini* is the right Vagus nerve, there remains unsolved the mystery of controlling it. The modern physiology does not refer to the voluntary control of the autonomic nervous system. Normally the current of the Vagus is constantly going on and regularly controlling all the vital organs of the body automatically and unconsciously. When the *Kundalini* is doing this its normal work, it is said in Yogic literature, to be lying dormant. To us, the only visible manifestation of the interference with the normal function of the Vagus is either by means of poisons generated in certain diseases or by certain medicinal agents. This interference may be in the form of a stimulation or a depression, as seen in the working the vital organs supplied by the Vagus. Its stimulation causes inhibition of the heart's action; its depression puts the controlling action out of gear. The heart then, being only under the acceleratory influence of the sympathetic fibres, beats faster. From this perceptible change, we can judge whether the Vagus is interfered with or not.

Such is, then, the state of our present knowledge, and it seems to us impossible to establish a voluntary control over the Vagus nerve. However to those who have gone through the different processes for the achievement of Yoga, it is an established possibility. A convincing proof of it was given by Deshbandhu by his performances, viz., the stopping of the movement of the heart and the arterial pulse of a particular part of the body, a reference to which has already been made in the opening paragraph of this book. These phenomena are mainly due to the stimulation of the Vagus—the "awakened *Kundalini*."

CHAPTER VI

PANCHA PRÂNAS AND PANCHA VÂYUS

To understand the process of the 'awakening of *Kundalini*' one must have a proper understanding of the *Pancha Prânas* which may be said to be the five types of vital forces or energies that govern the body.

All visible and invisible happenings in the universe are under the influence of Cosmic Impulse (the *Prâna*). The activities of the human body forming a part of the whole, automatically come under its control and this Cosmic *Prâna* as it functions in the body is named variously, according to the activity of the body it controls and the situation it occupies. Thus we have arrived at five kinds of impulses in the body known as *Pancha Prânas:—Udâna*, *Prâna* (auxiliary), *Samâna*, *Apâna*, and *Vyâna*.

Udâna rules the region of the body above the larynx. This *Prâna* keeps us on the alert as regards our special senses. All the automatic functions of these anatomical sections of the body are under the control of the cephalic division of the autonomic nervous system.

Prâna has been located in the region between the larynx and the base of the heart. It governs the verbal mechanism and the vocal apparatus, the movements of the gullet, the respiratory system and the muscles engaged in it. These functions are governed mainly by the cervical portion of the autonomic nervous system.

Samâna has been located in the region of the body between the heart and the navel and rules the machinery of the metabolism for the maintenance of life, i.e., the secretions of the stomach, the liver, the pancreas and the intestine, as also the circulation of blood in the heart and the blood vessels. This portion is controlled mainly by the splanchnic nerves arising out of the ganglia of the sympathetic portion of the autonomic system in the thoracic region.

Apâna has its abode below the navel and rules the autonomic action of the kidney, the colon, the rectum, the bladder and the genitals, i.e., it governs mostly the excretory apparatus of the body. These functions are governed by impulses from the lumbar portion of the autonomic system.

Vyâna pervades the whole body and governs the movements of the body due to the contraction and relaxation of muscles, both voluntary and involuntary, and the movements of the joints and structure around them. This *Prâna* is said to be responsible for the erect posture of the body, which is more a reflex action through the spinal cord and through the stimulation of the autonomic ganglia situated vertically along the middle of the body.

Beyond the description given above nothing definite is said about these *Pancha Prânas;* but, from their location and the functions they perform, I am inclined to think that they are the five important subsidiary nerve centres in the brain and spinal cord. These centres unconsciously control the katabolic activity of the sympathetic portion through the fibres of the parasympathetic and are anabolic in nature. These centres are called *Shaktis* of the *Chakras*. Every involuntary act in the body is governed by these two sets of fibres; when their activities are evenly balanced, their presence is not felt. When that balance is disturbed by over-activity of any of these fibres, the reflex centre is over-stimulated to generate an impulse which carries information to the highest centre in the brain.

It has now been proved that the chief centres, where knowledge of action and sensation is manifested, are located in the cortex of the brain. These centres are both receiving, i.e., sensory, and directing, i.e., motor, and have their subsidiary centres in the two large swellings called the basal-ganglia in each hemisphere of the brain. They are known as the thalamus and the corpus-striatum. The first is auxiliary to the chief sensory centre and the second to the chief motor centre in the cortex of the brain. Normally, the chief motor centres are more or less under the control of the will, and importance is not attached to them in the Yogic literature. The Yogi is concerned with the subsidiary nerve centres in the thalamus. The normal function of the thalamus is to receive sensations from all parts of the body, which are relayed to it through the spinal cord, before they reach the chief centre.

As the thalamus is the highest reflex centre in the brain and as all impressions ascend to it, it is called the *Udâna-prâna*. The last relay in the cord, from which it receives impulses, is from that portion of the cord, called the Bulb, which is on a level with the root of the nose. *Udâna-prâna*, is therefore, said to rule the portion of the head above this point.

The Yogi, by a conscious control over the *Udâna-prâna*, suppresses all incoming and outgoing sensations in it, and the suppression is necessary to prevent that distraction of the mind which he is anxious to control. By concentration (*Samyama*) on this *Prâna* the Yogi becomes light in weight and can walk on water, through marshes, and over thorns, and can will his own death at any moment.

Prâna (subsidiary) is the next reflex centre in the cord. Its normal function is to receive all afferent impulses from within and without the body, and to control unconsciously the activity of the sympathetic fibres. It is situated in the medulla oblongata and governs the respiratory and circulatory functions. The last relay in the spinal cord, from which it receives impulses, is situated on a level with the apex of the heart. It is, therefore, said to rule the region of the body between the mouth and the heart.

Samâna-prâna, is the third reflex centre in the body and is said to preside over the portion of the body between the heart and the navel. It inhibits the excessive activity of the digestive tract.

Apâna-prâna, the fourth reflex centre, rules the region of the body below the level of the navel. Normally, sends efferent impulses to the excretory and ejaculatory mechanisms in the body, as occasion arises. These impulses from *Apâna-prâna* cause relaxation of the sphincters of the anus and bladder, as well as contraction of the muscular portion above them, these actions being necessary for the expulsion of their contents.

Vyâna-prâna is said to pervade the whole body. Its function is to keep the whole body stationary and this stationary condition is due to the balancing of action of the various antagonistic muscles in the body through the unconscious reflexes that are generated along the whole of the spinal cord.

FIVE UPA-PRÂNAS. It must not be supposed that these are the only *Prânas* (reflex-centres) that were known to the ancient Yogis. They have mentioned five more naming them the *Upa-prânas*. These are *Nâga*, *Kurma*, *Krikkara, Devadatta*, and *Dhananjaya*, and the stimulation of these causes, respectively, belching, hiccuping, yawning, hunger and drooping of eyelids before sleep. These are all reflex actions, according to our knowledge of physiology.

Every one of these *Pancha Prânas* is governed by *Vâyus* which, too, are five in number. These are named in the same way as the five *Prânas*, being called *Prâna, Apâna, Udâna, Vyâna* and *Samâna*. The word *Vâyu* in the Yogic literature is used to denote a current or an impulse which is one of the properties of a nerve. All these *Vâyus* are, therefore, simply nerve impulses, either generated or received by *Prâna* from its different locations in the body. These locations of *Prâna* correspond with the different plexuses of the sympathetic portion of the autonomic system and each plexus, i.e., lotus forms an independent nerve centre which can receive and generate a nerve impulse.

In the process of *Prânâyâma*, *Prâna-vâyu* is said to be generated with the intaking of the breath. It is an impulse going to the brain or nerve centres located in the body and is, therefore, an afferent impulse, as we know it.

Apâna-vâyu is generated by the exhaling process in the performance of *Prânâyâma* and is an impulse which travels away from the brain or nerve centres. It is, therefore an efferent impulse. At the junction of the afferent (*Prâna*) and the efferent (*Apâna*) impulses is said to be located *Vyâna-vâyu*. The function of *Vyâna-vâyu* is to transfer the *Prâna* impulse to the *Apâna* impulse. From this description of *Vyâna-vâyu*, it appears to be a reflex impulse, which is started either by the brain, the spinal cord, or the nerve centres in the form of the plexus of the sympathetic. When this reflex impulse starts from the brain, the energy of the *Prâna* impulse is transferred through the *Apâna* impulse to the skeletal muscles of the body, and the movement is manifested or is made apparent

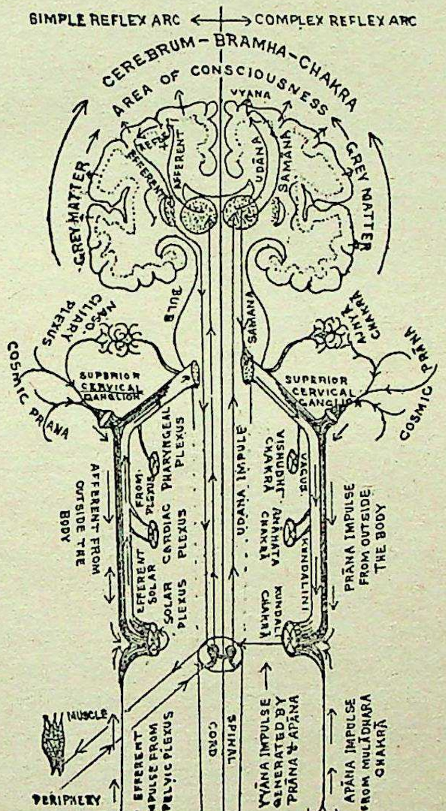

SIMPLE REFLEX ARC
COMPLEX REFLEX ARC
CEREBRUM - BRAMHA - CHAKRA
AREA OF CONSCIOUSNESS
VYANA
REFLEX
EFFERENT
AFFERENT
UDANA
SAMANA
GREY MATTER
GREY MATTER
BULB
NASO-CILIARY PLEXUS
AJNYA CHAKRA
COSMIC PRANA
COSMIC PRANA
SUPERIOR CERVICAL GANGLION
SUPERIOR CERVICAL GANGLION
SAMANA
PHARYNGEAL PLEXUS
FROM PLEXUS
CARDIAC PLEXUS
EFFERENT SOLAR
SOLAR PLEXUS
AFFERENT FROM OUTSIDE THE BODY
UDANA IMPULE
VISHUDHI CHAKRA
ANAHATA CHAKRA
KUNDALI CHAKRA
VAGUS
KUNDALINI
PRĀNA IMPULSE FROM OUTSIDE THE BODY
MUSCLE
PERIPHERY
EFFERENT IMPULSE FROM PELVIC PLEXUS
SPINAL CORD
VYĀNA IMPULSE GENERATED BY PRĀNA + APĀNA
APĀNA IMPULSE FROM MULĀDHARA CHAKRĀ

Diagram showing simple (unconscious) and complex (conscious) Afferent and Efferent Channels of the Autonomic nervous system.

by conscious sensation; but when this reflex impulse starts from the plexuses of the sympathetic, it controls the accelerating effect produced by the *Prâna* and *Apâna* impulses in the organs supplied by that particular plexus without producing any conscious sensation. When this unconcious act is to be made conscious, the acceleratory action of the organ sends a *Vyâna* (reflex) impulse to the spinal cord (*Sushumnâ-nâdi*) which ascends the posterior part of the *Brahmarandhra-chakra* where the thalamus is situated, and finally it reaches the cortex of the brain where consciousness is manifested. This ascending acceleratory impulse is called *Udâna*. When the *Udâna* impulse reaches the cortex, it stimulates it to start a controlling or inhibitory impulse back to the excited organs which started the *Vyâna* impulse. This is an efferent impulse from the cortex of the brain, and, as it equipoises or controls the excited organ, is called *Samâna* This impulse is made to pass through the Vagus and other nerves of the para-sympathetic portion which have their nuclei in the mid-brain and the bulb.

This type of complex reflex emphasizes the fact that although the function of many of the organs innervated by the autonomic nervous system is, in a large degree, autonomous, there is still a dependence upon and a close relationship with the central nervous system. Knowledge of this fact made the ancient writers on Yoga attach paramount importance to the ***Sushumnâ-nâdi.***

CHAPTER VII

AWAKENING OF KUNDALINI BY BANDHA PROCESSES

These *Pancha Prânas* and the currents generated by them are not normally under the control of the will, and to establish such a control is one of the most important achievements in the Science of Yoga. These *Prânas,* as said before, are the different controlling energies of the plexuses of the sympathetic, but there is a *Shakti* that controls singly the activities of these plexuses; and that *Shakti* is the Vagus nerve, i.e., *Kundalini.* By establishing control of the will over this *Kundalini*, one can subjugate not only the *Panch Prânas* but the whole of the autonomic nervous system and thus suspend the katabolic activity of the body which disturbs the mind.

This current of *Kundalini* is brought under control by practising certain catches (*Bandha*) and by attitudes of the body (*Mudrâ*) during the process of *Prânâyâma.*

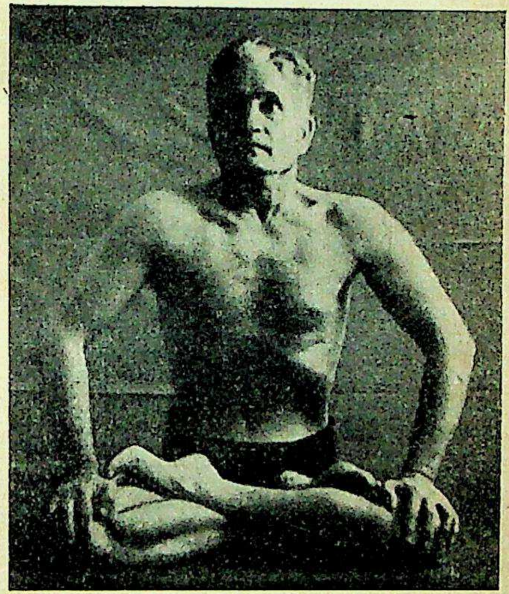
How the rhythmic action of *Prânâyâma* stimulates the vagal centre in the medulla has already been explained by the process of *Prânâyâma.* During the *Kumbhaka* stage (breath retention) of *Prânâyâma*, when the inhaling of outside energy with the oxygen is stopped, and exhaling of carbonic acid gas is prevented, the venosity of the blood is increased and this increased venosity of the blood has a powerful effect in stimulating the origin of the *Kundalini* (the Vagal-centre in the medulla) to action. The longer the breath is retained, the more powerful is the effect on the *Kundalini*. By this process the current generated proceeds through the whole length of *Kundalini* and distributes itself in *Manipura-chakra*, which is indirectly connected with the *Swâdhishthâna* (hypogastric) and *Mulâdhâra* (pelvic) *chakras*.

The directing of the gaze at the root or tip of the nose in the process of *Prânâyâma* has the effect of stimulating the afferent sympathetic fibres of the *Kundalini*. The convergence of the eye-balls to a near point in the body stretches the lateral rectus muscles of the eye-balls, and stimulates the ciliary ganglia which are in close connection with them in the orbit. The current, generated by this stimulus, is carried along the various fibres of the sympathetic to the efferent fibres of the Vagus through the superior cervical ganglion of the sympathetic chain. This afferent impulse, passing through the Vagus, stimulates the fibres of the solar plexus and of the plexus situated further down.

The exercises of *Prânâyâma*, with the gaze fixed on the tip or root of the nose, make impressionable the afferent fibres of the *Kundalini* (the Vagus nerve) throughout its whole length; but this is not what the Yogi is anxious to achieve. He wants the current of the *Kundalini* to stop at a desired *Chakra* to inhibit the function of that particular *Chakra;* and this is done by practising certain *Bandhas* (catches) during the process of *Prânâyâma* and also by certain attitudes of the body called *Mudrâ*. These attitudes of the body must not be confounded with 'postures' of the body (*Âsana*). Through *Mudrâ* is a variety of *Âsana*, it differs from it in having a certain definite contortion of the portion of body above the neck, while in *Asana*, that contortion is restricted to the portion below the waist. There are three important *Bandhas* and a good many *Mudrâs* which a student of Yoga is advised to practise, with the help of a Guru, to rouse the sleeping *Kundalini*. The various *Âsanas*, *Bandhas* or *Mudrâs* are said to deliver the body from the ravages of idleness and old age, and thus to postpone death. They keep the body active and supple, and also prevent the distraction of the mind, over which Yogi wants to establish control. They also preserve him from injury, fire, and water. It is in this that the superiority of *Kundali* Yoga lies over *Jnyâna* Yoga. A *Hatha*-Yogi, in whose achievements the *Kundali* plays an important part, perhaps knows the doctrine "Mens sana in corpore sano", for by these physical exercises, he tempers his body to the condition of steel, and establishes a perfect control over it. He really becomes master of his body, and can will his own death at any moment. He is called *"Ichchhâmarani"*. Thus a *Hatha*-Yogi can enjoy all physical happiness within the restrictions given in the eight rules of Yoga, and, if he be perfect in his art, he can control the mind and seek liberation from further existence and become absorbed into Brahman which is all-pervading. A *Jnyâna* Yogi, on the other hand, perhaps by superiority of his evolutionary advancement, establishes from the very start a perfect control over his mind by intellectual processes, regardless and unmindful of his physical body and the ravages of diseases and ill health. Physical worries do not distract his mind from the object of his achievement. He may be lean, weak, prone to disease, and yet he is a Yogi. In fact, though he lives in his body, yet he is out of it. His mind is always in the contemplation of the Self and seeking its liberation, while his body is undergoing the effects of his desires entertained in past lives. He is thus known as *Jîvânmukta*. In *Jnyâna* Yogi, *Kundalînî* is not necessarily active.

THE THREE BANDHAS AND THEIR PRACTICE. The three important *Bandhas* (catches) named above are *Mula-bandha*, *Jâlandhara-bandha*, and *Uddiyâna-bandha;* and they are all to be practised in one rhythm of *Prânâyâma*. *Mula-bandha* is to be practised at the beginning of the process of *Prânâyâma*. In this *Bandha*, the centre of the perineum (Yoni) is firmly pressed by the heel of the right foot, as in *Siddhâsana* and, when this is neatly done, the whole body appears to rest on that heel; the left leg then rests easily on the right thigh; with the *Puraka* of *Prânâyâma*, i.e., with deep and prolonged inhalation, the anus becomes

Plate III



UDDIYANA-BANDHA WITH CONDITION OF THE NECK PRELIMINARY TO JALANDHARA-BANDHA

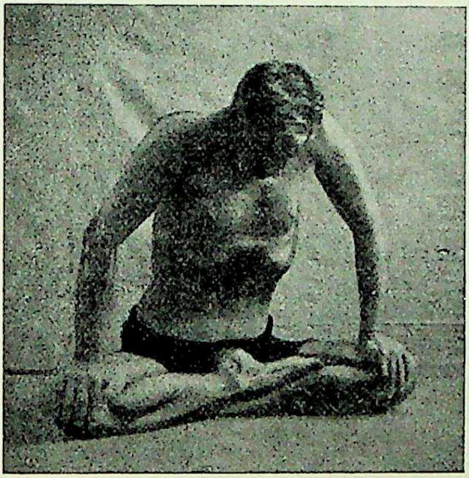
contracted and drawn upwards, the hands automatically rest on the knees, shoulders appear elevated, and the head and the neck appear depressed between them (see plate III). While, in this attitude of the body, *puraka* is completed, *Kumbhaka*, i.e., retention of the breath is practised with the head bent forward, and the chin is made to press firmly against the root of the neck. This causes submersion of "*Kantha-Mani*" (popum adami) in the depression caused by the elevation of the shoulders. This attitude of the body is the *Jâlandhara-bandha*. After this, the *Rechaka* process of *Prânâyâma* is gone into, and here the breath is exhaled, the navel drawn upwards, with expansion of the lower part of the thorax, till the abdomen is completely flattened. This is called *Uddiyâna-bandha* and with these three *Bandhas* a complete rhythm of *Prânâyâma* ensues.

The effect of these *Bandhas* on the nervous mechanism of the autonomic system is interesting to follow. In *Mulabandha* the pressure of the heel on the centre of the perineum from below upwards and the pressure of the body, which is made to rest on the heel, from above downwards, stimulates the pelvic plexus (*Mulâdhâra-chakra*) to action; at the same time, it blocks the downward and outgoing (efferent) impulses from it, but the upward afferent impulses, being unchecked, ascend through the connecting fibres to the *Swâdhisthâna-chakra* (hypogastric plexus) and thence, through it, to the *Manipura-chakra* (the solar plexus).

These plexuses being thus stimulated, there occurs an inhibition of functions of the organs supplied by the sympathetic fibres from these plexuses. The peristaltic action of the gastro-intestinal tract being inhibited by stimulation of the sympathetic fibres, gases accumulate and inflate it with consequent discomfiture; also, owing to the contraction of the blood vessels of the splanchnic area, there is diminution of blood supply to the abdominal viscera, which checks the secretion of the gastro-intestinal tract. Consequent upon this disturbance of the katabolic activity of the sympathetic system, there occurs a general circulatory and respiratory disturbance, the heart beats faster, the blood vessels going to the muscles dilate, and the cutaneous blood vessels contract. Respiratory activity is increased, the breathing becomes faster and a feverish sensation is produced in the body. All this activity of the sympathetic is described in weird and exaggerated language in the old Yogic literature (see *Jnâneshwari* Chap. VI); yet, in the main, it is true and accurate.

This katabolic disturbance in the body causes a fear of illness in the mind of an initiate and makes him leave off the practice of *Prânâyâma* with *Bandha;* but if persisted in, under the guidance of a Guru, this over-stimulation of the sympathetic fibres automatically excites the parts of the *Kundalini* in the *Manipura-chakra,* (i.e., solar plexus) where she is said to be lying dormant. The afferent (*Prâna*) impulse which is generated from the *Kundalini-chakra* tries to

Plate IV



POSE SHOWING THE THREE BANDHAS
MULA-BANDHA, UDDIYANA-BANDHA
AND JALANDHARA-BANDHA

travel upwards to its abode in the medulla, i.e., to the vagal centre, stimulation of which brings under control the activity of the sympathetic quite unconsciously. This unconscious activity of the *Kundalini* is not what is desired. A Yogi desires to become conscious of the work of *Kundalini* and that is only possible if stimulation of the vagal centre is done through the posterior part of the spinal column (*Sushumnâ-nâdi*), the nerve of knowledge and consumer of time. *Jâlandhara-bandha,* by its particular bend in the neck, prevents this afferent impulse, generated from the *Kundali-chakra,* from reaching the vagal centre and, at the same time, it directs downwards the afferent impulses, generated by the inhalation of breath, along the sympathetic fibres in the vagal nerves. This afferent impulse (*Prâna-vâyu*), from outside meets the efferent impulse (*Apâna-vâyu*), generated by the *Mulâdhâra-chakra,* in the region of the navel. When these *Prâna* and *Apâna* impulses meet together, the meeting is manifested by internal vibrations, i.e., sounds which are heard by a Yogi and are known as "*Nâda*" or "*Shabda-Brahma.*" These two impulses together stimulate the endings of the vagi in the *Manipura-chakra* generating a reflex impulse (*Vyâna-Vâyu*) that in its turn produces an ascending impulse (*Udâna-vâyu*) which goes through the posterior portion of the spinal-cord (*Sushumnâ-nâdi*) by exhalation of breath during *Uddiyâna-bandha.* This *Bandha* (catch) prevents the *Udâna*-impulse from descending. The *Udâna*-

impulse therefore rises atom by atom, i.e., by relays to the cortex of the brain and transmits to the vagal centres the impressions made on its nerve endings, and the mind, through the medium of *Brahma-randhra-chakra* (the brain), becomes conscious of its function.

By the constant practice of *Prânâyâma* with these three *Bandhas* mentioned above, a Yogi establishes a conscious control over *Kundalini* which is then easily acted upon by the will, This conscious control may not last long. The *Kundalini* tries to resist this interference by the will and begins to move in and out of her abode in the medulla, i.e., begins to send and receive efferent and afferent impulses. This is what in Western physiology is called 'the vagus escape.' The recurrence of a few beats of the radial pulse during its stoppage-period of three minutes, when Deshbandhu performed this feat, may be thus explained. A Yogi's effort is not only to get conscious control over the *Kundalini,* but to keep her steady and inactive in her abode in the mid-brain, so that she may remain impervious to the afferent and efferent impulses which have the power of influencing the mind-stuff which is "*Chitta*" in the language of the Yoga-manual. *Kundalini* is thus submerged in *Chitta.* The submersion of *Prâna* in the mind is "*Samâdhi,*" i.e., super-consciousness, and does not prevent a Yogi from the worries of successive rebirths; but the submersion of *Kundalini,* which is said to be the cord of desire, in *Chitta,* which is a further process of

Samâdhi, does obtain for a Yogi the desire of his life, viz., liberation from rebirths. This is known as *Nirvikalpa Samâdhi,* wherein a Yogi is one with that Cosmic Power which creates and sustains the universe.

CHAPTER VIII

AWAKENING OF KUNDALINI (*Contd.*) BY MUDRA PRACTICES

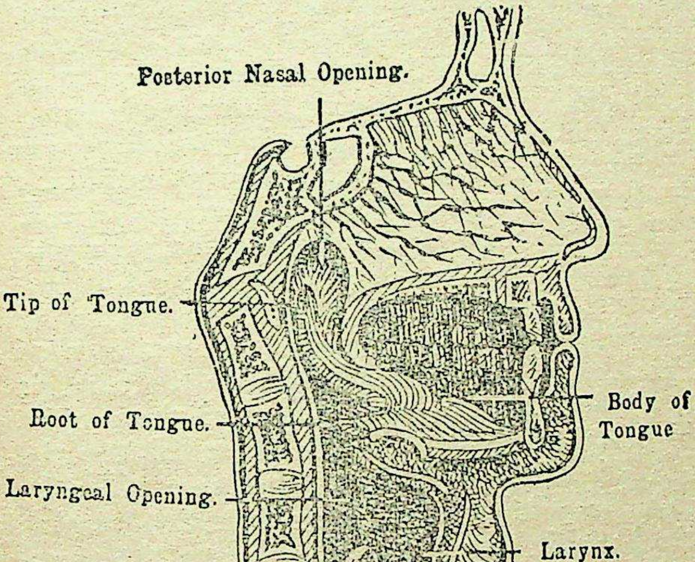
SHAKTICHALAN MUDRA. There are a good many *Mudrâs* for rousing *Kundalini* and the easiest of these *Mudrâs,* the one to be practised first, is the "*Shaktichalan Mudrâ.*" The pose of *Siddhâsana* having been assumed both the legs are caught hold of by the hand and made to press firmly on the perineum where *Mulâdhâra-chakra* is situated; then as a next step, with powerful in and out breaths the muscles of the abdomen are made to contract and relax, with corresponding contraction and expansion of the anus. Contraction of the anus stimulates the *Apâna* impulse to ascend and meet the *Mânipura-chakra*, i.e., Solar plexus, around which the efferent fibres of *Kundalini* arborise. The contraction of the abdominal muscles, which press the contents of the abdomen against that plexus, prevents the *Apâna* impulse from travelling upwards. Inhalation generates the *Prâna*-impulse which meets the *Apâna*-impulse at the *Manipura-chakra*. The meeting of *Prâna* and *Apâna* impulses is the first preliminary for consciously exciting *Kundalini,* which starts successive impulses of *Vyâna,* i.e., reflex action *Udâna*, i.e., the ascending, and *Samâna* i.e., the equipoising; and their mode of action is the same as mentioned in the working of the various *Bandhâs*. In this *Mudrâ*, as in the *Bandhâs*, the fibres of *Kundalini* are excited at their terminations.

SHANMUKHI MUDRA, ITS IMPORTANCE. The next *Mudrâ* to be practised is the *Yoni* or *Shanmukhi Mudrâ*. In this *Mudrâ*, all external impressions, which are carried by the nine openings in the body to the brain, are stopped by the fingers and heels. These nine openings are the two each of the eyes, ears, and nose, and one each of the mouth, urethra, and anus. It is impossible to breathe when the nose and the mouth, are closed. It is, therefore, advised that the opening of the mouth should be only partially closed by protruding the lips forward like the beak of a crow.

The *Prânâyâma* process is then followed by meditating on the six *Chakras* from the lowest upwards. In this *Mudrâ*, all external impulses of sight, sound and smell, being stopped the nerve centres in connection with these remain inactive and with the in-take of *Prâna*, through the opening of the mouth, an afferent impulse, through the gustatory nerves only, is carried to the vagal centre, that is to the abode of *Kundalini*—in an upward direction. This stimulates the centre to produce an *Apâna* impulse which descends down for a very short distance and is immediately met by *Prâna*, i.e., the afferent impulse, the meeting of the two impulses again stimulating the vagal centre, reflexly through the spinal-cord. In this *Mudrâ* the vagus nerve is stimulated at its very centre.

KHECHARI MUDRA, ITS IMPORTANCE AND EFFECTS. After complete mastery of *Shaktichalan* and *Yoni-Mudrâ* the practice of *Khechari-mudrâ* is undertaken. In this *Mudra* the tongue is rolled backwards and upwards, during the process of inspiration, behind the soft palate so as to reach the base of the skull behind the posterior nasal openings. The gaze is fixed on the root of the nose. This position of the tongue in the mouth is said to prevent the flow of current along *Idâ, Pingalâ, Sushumnâ, Hasta-jivhâ,* and *Gandhâri Nâdis,* i.e., along the fibres of the sympathetic in the tongue, the eyes, and the sympathetic chains, to the spinal-cord. The *Khechari-mudrâ* is said to be the king amongst the *Mudrâs* and yet, as with the other *Mudrâs* and *Bandhâs,* the physiological importance of this *Mudrâ* too is not mentioned. The actual modus operandi is difficult to gauge from the very meagre description at our disposal and it would be even risky to suggest one. I shall, however, make an effort to explain the physiological and anatomical importance of this *Mudrâ.*

The rolling of the tongue upwards and backwards to reach the base of the skull, carries the superior surface of the tongue, with its end-organs of sensations away from the influence of *Prâna* from outside. These end-organs which are situated on the terminations of the nerves, not being stimulated by *Prâna* impulse, fail to carry afferent impulses to the Vagus nerve through the superior cervical ganglion. The tongue, when it is made to assume this desired position, effectively blocks up the posterior nares and prevents expiration through the nose; furthermore the rolling back of the tongue in the direction mentioned, draws the root of the tongue forward towards the teeth; concomitant with this forward action, the opening of the larynx, through which the air goes to


Posterior Nasal Opening.
Tip of Tongue.
Root of Tongue.
Laryngeal Opening.
Body of Tongue
Larynx.

Sagittal section of the face showing the position of the Tongue in Khechari-mudra, and from the lungs, is carried underneath the base of the tongue and there the closure of the glottis is secured through a contraction of its own muscles by a stimulus going to them from the laryngeal branches of the Vagus, which supply the larynx, and the base of the tongue. Though the rolling up of the tongue prevents the stimulation of the vagal centre through the afferent fibres from the buccal cavity and lungs yet it stimulates it directly through its own afferent fibres. This closure of the larynx is again helpful in preventing the exit of the air from the lungs. Besides, this particular pose of the tongue lifts up the lower jaw towards the upper and tends to keep the mouth closed. This little device of the tongue during the process of inspiration practically blocks up all expiratory channels, producing a condition of vacuum in the buccal cavity, and at the same time, keeps the lungs inflated with the pure air necessary for the oxygenation of the venous blood of the body, which is propelled into the lungs from the right side of the heart. The inflated condition of the lungs (positive ventilation) sends an afferent stimulus to the vagal centre which, in turn, sends an efferent expiratory stimulus to the lungs and an efferent inhibitory stimulus to the heart. The expiratory stimulus to the lungs proves abortive owing to the closing of the expiratory channels by the tongue, but the inhibitory stimulus to the heart causes the heart to contract powerfully. This contraction of the heart drives out all the oxygenated blood, gathered into the left side of the heart during the process of inspiration, into the arteries for the nourishment of the tissues of the body. It is known that during each inspiratory period there occurs in every individual, a moment, when the oxygen-content of the blood, both in the tissues and blood vessels, is at its highest. If this moment is artificially prolonged, as was seen under X-Rays when Deshbhandhu made the beats of the heart inaudible, no blood enters the heart and there being nothing in the heart to expel, arterial and pulmonary circulation comes to a standstill. This stationary condition, equalises the oxygen pressure in the minute arteries and in the tissue, prevents an interchange of material between them, and keeps the whole body perfused with suitable material necessary to keep up its vitality, though all the functions of the body are practically at rest. The heart, too, remains perfused with a suitable medium and, though empty and contracted, preserves its inherent power of contraction, etc., in a latent form. This is the condition taken advantage of by a Yogi practising *Khechari-mudrâ;* he tries to keep the *Prâna*, i.e., energy absorbed, bottled up, without contamination, in the body by blocking the opening of the lungs with the rolled up tongue, so that he can liberate this energy for action at his own sweet will. To all outward appearance a Yogi practising this *Mudrâ*, appears to be dead, and in this condition he can remain as long as he likes either buried under the earth or above it.

It is not possible to practise this *Mudrâ*, unless the tongue is exceptionally long. To roll the tongue so as to act as a block, it must be long enough to reach the root of the nose between the eyebrows. For this lengthening of the tongue certain processes are advised, viz., (*a*) "*Chhedana,*" i.e., the cutting gradually at intervals of the band which holds the tongue to the base of the mouth; (*b*) "*Châlan*" this tie being removed the tongue is then moved from side to side by holding it between the fingers; (*c*) "*Dohâna*" pulling forward in a manner similar to the milking of a cow.

No mention is made in Yogic literature of the moment in the process of *Prânâyâma,* when the tongue is to be rolled upwards and backwards. Though the movements of the tongue are voluntary and it could be rolled backwards at any moment by practice, yet the rolling movement is greatly facilitated by the process of swallowing, when there occurs for a time a suspension of breath. This suspension may occur at the end of either inhalation or exhalation. The Yogi practising *Khechari-mudrâ* has to chose either of these moments. If the rolling be done at the end of exhalation, there is not enough oxygen in the body to vitalise the tissues. The Yogi's aim, however is to absorb enough energy from outside and to retain it in the body, and this is effectively done by making the tongue assume the required position during the process of inhalation.

The practice of *Mudrâ,* then, in Yogic science is designed to establish by constant effort a conscious control over *Kundalini*, i.e., the Vagus nerve, either by stimulating it at its endings or at its centre.

After establishing a conscious control over this *Kundalini* by the process *Prânâyâma* with *Âsana*, *Bandhâ* and *Mudrâ* there arises the necessity of willing it to action, and this is done by *Samyama*, which includes *Dhâranâ*, *Dhyâna* and *Samâdhi*. I have already explained the meaning of these terms.

Concentration (*Dhâranâ*) is fixed upon the nerve to be worked upon to the exclusion of all others. This generates in the nerve an afferent impulse (*Prâna-vâyu*) which is attracted by the *Chakra* or the object that you wish to influence or achieve by meditation (*Dhyâna*). And, by continuous meditation on the object of your desire, an afferent impulse is generated which is carried upwards to the brain through the *Nâdi* of knowledge, the *Sushamnâ* (spinal cord), where the manifestation of your desire is made known. The knower in you thus made conscious by the constant impressions of your desire tries to fulfil them when the state of superconsciousness, i.e., *Samâdhi*, is reached; and it is in this state that everything mental, moral and spiritual can be achieved. Here concentration acts as a will force, meditation as a thought force and *Samâdhi* as a soul force.

Normally, we are not able to differentiate between these three acts, as they occur in quick succession, and only the result is made known to us.

By this process of *Samyama*, *Kundalini* can be made to act on or pierce through the six important *Chakras* of the body; and this passage of *Kundalini* through the *Chakras* is known in the Yogic literature as *Shat-chakra-bheda*.

CHAPTER IX

ASHTA SIDDHIS

When a Yogi becomes a perfect adept in the control of *Kundalini*, the soul is made free from the shackles of *Chitta*, *Vâsana* and *Prâna;* it is then free to move out from the *Brahma-randhra*, in which it was kept in captivity, and occupies a bigger cavity surrounding the brain and the spinal-cord, known as *Âkâsha,* and becomes absorbed in the Infinite Intelligence from which it emanated. The Yogi, when in this state of *Nirvikalpa-Samâdhi,* identifies himself with that which he contemplates, and acquires certain supernatural powers. These are eight in number and are known in yogic literature as *Ashta siddhis.* They are acquired by the particular mode in which the Yogi concentrates and merges himself in the Divine Spirit (the Cosmic Power) or contemplates it within his own self. The following are the names of the *Siddhis* and the effects that they produce.

(I) *ANIMĀ* or the microcosm is a specific property of minuteness of the soul. A Yogi, concentrating, meditating and fixing (*Samyama*) his attention on this quality of the soul during a forced exhalation draws together his entire energy to a point, which is then made to penetrate into all bodies so as to make them vibrate according to the will of the Yogi. A Yogi at first tries this *Siddhi* on inanimate things and when he becomes a perfect master he gains another *Siddhi* of entering into dead bodies and bringing them to life again. This *Siddhi* is called *Prâkâmya* or overgain.

(2) *MAHIMÂ* or the macrocosm is also a special quality of the soul. It fills the body and extends itself through all space and becomes enclosed within itself. By concentrating on this property of the soul, a Yogi, by mere inhalation of air, makes his body assume a large size and comprehends the universe in himself as was done by Krishna, when he assumed the *Virat-swarupa* to show to Arjuna how the whole of the universe was within him.

(3) *LAGHIMÂ* or lightness is the third property of the soul. By making *Samyama* on this property of the soul, the Yogi produces a diminution of his specific gravity by successive *Puraka Prânâyâma*, i.e., by swallowing large draughts of air. He can thus make his body as light as a feather so that it can float in the air or in water. The Yogi's power of travelling thousands of miles in a moment is attributed to this *Siddhi* or perfection.

(4) *GARIMÂ* or gravity is the fourth property of the soul, i.e., of increasing the specific gravity of the body and thus making it as heavy as a mountain by swallowing large draughts of air and compressing them in the tissues of the body. Krishna is said to have assumed this heaviness of body (*Vishvambaramurti*) and thus preponderated over all weights in the opposite

scale when he subdued the pride of his wife *Satyabhâma.*

(5) *PRÂPTI* or sucess is the obtaining of desired objects and supernatural powers. The Yogi, when he is in *Samâdhi,* acquires the power of predicting future events, of understanding unknown languages, of curing diseases, and of divining the unexpressed thoughts of others. He also becomes clairvoyant and clairaudient. All the miracles of saints and saviours of all climes and times are due to this perfection. Do we not read in the first few lines of the *Bhagavad-Gitâ* about Sanjaya giving a description of the battle waged at Kurukshetra to the blind king Dhritarashtra, even while staying with him in latter's place?

(6) *PRÂKÂMYA* or overgain is obtaining more than one's expectations and consists in the power of casting off the old skin and maintaining a youthful appearance for an unusual period of time, as is recorded of the Yogi-King Yayati, and Alcibiades, who maintained an unfading youth to the last day of their lives. By some writers it is defined to be the property of entering into the body of another person (*vide Animâ*).

(7) *VASITVAM* or subjection is the power of taming living creatures and bringing them under control. It is defined to be restraint of the passions, and the emotions and likewise, the bringing of men, women and the elements under subjection.

(8) *ISHATVAM* or dominion is the obtaining of universal dominion either in this life or the next, by means of Yoga. It is also said to be the attainment of divine power, when the Yogi finds himself in a blaze of light.

Thus, when the Yogi, through his soul, tries to unify himself with the soul of the universe, he can make himself lighter than the lightest substance, and heavier than the heaviest, can become as vast or as minute as he pleases, can traverse all space, can animate any dead body by transferring his spirit into it. He can render himself invisible, can obtain all objects, become equally acquainted with the past, present and future, and he can be finally united with God, and consequently exempted from being born again upon this earth.

The explanation of these *Ashta siddhis* is beyond the scope of the physiology of the physical body. A Yogi cannot do or achieve these through the nerve current in his body, but when the Yogi has freed himself from nerve currents, he will be able to achieve the *Ashta siddhis* by other channels. The channel through which these *siddhis* are worked is the *Akâsha* material of the body. Surrounding this physical body of ours there is said to exist a body, which is an exact counterpart of our physical body, a counterpart composed of an ethereal substance of a very high rate of vibrations. It is neither mere matter nor yet it is mere force. It is composed of very fine matter but far more tenacious than anything that is known as matter. This *Âkâsha* material of the body, in the science of Theosophy, is descriptive of the super-sensible substance supposed to pervade all space and enter into all bodies; and it is the body that is formed out of this substance which is called the Astral body.

The Yogi, when in *Samâdhi,* consciously liberates his soul from the *Brahma-randhra.* which now begins to function through his Astral body, even at points in space far removed from his physical body; when this object is gained, the Yogi withdraws his soul from Astral body to the physical body along a fine filament of ethereal substance which connects these two bodies together. If this filament is torn by accident, the soul in the Astral body is unable to return to the physical body, and the body dies.

In these perfections or *Siddhis*, *Kundalini* does not take any part directly, but it does prepare the ground for the soul to vibrate through another channel than the nerves.

The ultimate aim of the Yogi, in these various practices, is not to acquire and manifest various supernatural powers, which indeed only come to him on his course of becoming absorbed in the Infinite,—"He is then no longer that finite being having a consciousness of his own separate existence, but he is lost in and becomes one with the Infinite."

The various practices of Yoga appear simple and easy of achievement on paper; yet they are only to be learnt at the feet of a master. "Looking to the gravity of the subject and practices which have a close relation with the vital organs of the body, it is of paramount importance that the instructions should be received by a student from an adept. All men are not equally fitted to receive instruction; man inherits at birth his mental and physical capital according to his actions in previous births and has to increase them by manipulation, but, even among such, there are different grades. Hence one cannot become a Yogi in one incarnation."

If this be true, the question arises, whether all those persons, who exhibit supernatural powers to the world to earn a living, have gone through the manifold stages of Yogic practice. The answer to this question may very well be given in the words of Swami Vivekananda when he says that "whenever there is any manifestation of what is ordinarily called supernatural power of wisdom there must have been a little (control over the) current of *Kundalini* which found its way into the *Sushumnâ.* Only, in the vast majority of such cases of *supernaturalism* they ignorantly stumbled on some practice which set free, (and made them conscious of) a minute portion (of the control) of the coiled up *Kundalini.*"

CHAPTER X

SUMMARY

From all I have said, it may be gathered that the physical practices of *Kundali-Yoga* are for the development of control over the autonomic nervous system over which we have normally no control. The six *Chakras* in the Yogic literature, which, when controlled, give wonderful powers to a Yogi, are simply the six important plexuses of the sympathetic portion of the autonomic nervous system; and the *Shakti* (power) of *Kundalini*, which pierces these *Chakras*, i.e., forms connections with them is, according to my version of it, the vagus nerve in the body. Normally, *Kundalini* does her usual work unconsciously and is said to be lying dormant within us, and to establish conscious control over this *Kundalini* is an important step in the achievement of Yoga.

By constant practice of *Prânâyâma*, with *Âsanâ*, *Bandhâ* and *Mudrâ*, *Kundalini* is roused from her sleep and brought under the control of the will. When this *Kundalini* is roused from her sleep, she forces a passage through the different *Chakras* and excites them to action, and as she rises step by step the mind becomes opened and all vision and wonderful powers come to a Yogi when she reaches the brain. The Yogi then becomes perfectly detached from the body and the mind; and the soul finds itself free in every respect.

All the miracles of a Yogi, such as stopping the beats of the heart and pulse, etc., can be explained by this conscious control over *Kundalini.*

I would, therefore, define *Kundalini* Yoga as a science of physical and mental exercises of a particular form by which an individual establishes a conscious control over his autonomic nervous system so as to get in tune with the Infinite.

In conclusion, I have to express my thanks to the various authors from whose books I have drawn a great deal. Of these I attach a bibliography.

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APPENDIX

Glossary of Sanskrit anatomical terms (allegorical and plain), as mentioned in various Yoga-manuals and their commentaries, with their Western equivalents.

Âjnâ-Chakra—Naso-ciliary extension of the cavernous plexus of the sympathetic.

Âkâsha—Subarachnoid space which surrounds the brain and spinal-cord.

Alumbushâ—Glosso-pharyngeal nerve which supplies the mucous membrane of the pharynx, palate, tonsils and tongue.

Anâhata-Chakra—Cardiac plexus.

Apâna-Prâna—Subsidiary nerve centre in the lumbar region.

Apâna-Vâyu—Afferent nerve impulse along the autonomic nerves.

Bâna-Linga—Bulbous enlargement of the spinal-cord in the cervical region. The word Bâna stands in Sanskrit literature for a symbolical expression for the number five and as this bulbous enlargement forms a subsidiary nerve centre for five organs of senses it is called Bâna-Linga.

Bhaga—Pudendum-pubis.

Bindu—A dot "O" located in the Itara-linga. It is a dot-like olivary body in the medulla oblongata by the side of which the vagus nerve takes its origin.

Brahmânda—Egg of Brahma; body.

Brahma-Chakra—Cerebrum.

Brahma-Randhra-Chakra—Brahma which includes the cerebrum, cerebellum, and medulla oblongata, i.e., all the portion which surrounds the ventricular cavity.

Brahma-Randhra—Ventricular cavity in the brain.

Chakra—Plexus of the autonomic nervous system.

Chibuka—Chin.

Chitra-Chitrini—Spinal canal.

Dâkini Shakti—Efferent para-sympathetic fibres starting from the sacral nerves. They control the activity of the pelvic plexus. They are probably the nervi erigentes.

Devatâ of a Chakra—Subsidiary nerve centre in the spinal-cord regulating the activity of the sympathetic plexus.

Gândhâri-Nâdi—Left oculo-motor nerve.

Granthisthâna--Place where the Mulâdhâra joins the Merudanda, i.e., the promontory of the sacrum.

Guda—Anus.

Gulpha—Ankle joint.

Hâkini-Shakti—Efferent para-sympathetic fibres controlling the activity of the naso-ciliary plexus through the oculo-motor nerve.

Hasta-Jiva—Right oculo-motor nerve.

Hansa—The incantation (mantra) that is evolved with the respiratory movement while undergoing various Yogic practices. It is really made up of two words "Han" and "Sa." Han is the noise that is produced with forcible inhalation of breath while "Sa" is the noise produced with forcible exhalation of breath.

(Uchhvâse-Chaiva-Nisvâse-Hansah, Iti Akshara Dwayam).

Idâ-nâdi—Left sympathetic chain.

Itara-Linga—The opposite phallus. A phallus situated opposite (Itara) to the Swayambhu-Linga, i.e., conus medullaris, which is the lower bulbous end of the spinal-cord; and a bulbous enlargement of the cord opposite to this would be the pons with the medulla oblongata which is pyramidal in shape and forms a connecting link between the medulla spinalis and the cerebrum above.

Jânu—The knee.

Janghâ—Calf muscles.

Kâkini-Shakti—Efferent para-sympathetic fibres starting from the cervical portion of the spinal-cord. They control the activity of the Anâhat-chakra, i.e., cardiac plexus.

Kantha-Mani—Pomum adami.

Kundalini—Vagus, Pneumogastric or 10th cranial nerve.

Kuhu-Nâdi—Pubic nerve.

Lingas—Bulbous enlargements of the spinal-cord.

Lakini-Shakti—Efferent para-sympathetic fibres starting from the thoracio-lumbar region controlling the activities of the Manipura Chakra. These are the splanchnic nerves going to the plexus of the cœliac axis.

Lotus—A plexus of the autonomic nervous system.

Majjâ—Marrow; particularly the marrow of the brain.

Madhyamâ—Parâ, Pashyanti, Madhyamâ and Vaikhari are said to be identical in form with the Kundalini (Kundalinyâ-abhedarupâ). It may be taken to mean that these nerves have an identical property with that of Kundalini. These nerves are said to start from different plexuses of the sympathetic and join the lingas on the spinal-cord. Pashyanti has its source in Âjnâ-chakra and this meets the Itara-linga (Pons with medulla oblongata). This is probably the oculo-motor nerve of the para-sympathetic order. Madhyamâ has its origin in the Anâhata-chakra and joins the Bânalinga. These Nâdis are the cervical nerves that go to form the cardiac plexus and have a restraining influence over its function. Vaikhari-nâdi has its origin in the Swâdhisthâna plexus and joins the Swayambhulinga. These are probably the lumber nerves which start from the conus-medullaris and end in the hypogastric plexus. Parâ is the centre itself of the medulla oblongata and has the same restraining influence as that of *Kundalini*. I am inclined to believe that these nerves are really Shaktis (which see) of the plexus, differently named.

Mânas-Chakra—One of the basal ganglia of the cerebrum known as the thalamus.

Medhra—Penis.

Merudanda—Spinal column.

Manipura-Chakra—Plexus of the cœliac-axis, solar-plexus.

Mulâdhâra—Sacrum.

Mula-Kanda—Sacrum.

Nâbhi—Navel.

Nâdi—Nerve.

Pancha-Prâna—Five subsidiary nerve centres in the spinal column. They are Prâna, Apâna, Samâna, Udâna and Vyâna.

Para-Shiva—Chief phallus where *Kundalini* is said to merge. This is the olivary body in the medulla by the side of which the vagus nerve takes its origin.

Pashyanti—See Madhyamâ.

Pingalâ-Nâdi—Left gangliated cord of the sympathetic

Prâna—Vital or nerve energy.

Prâna-Vâyu—Nerve impulse.

Pushâ-Nâdi—Right acoustic nerve.

Râkini-Shakti—Efferent para-sympathetic fibres from the conus medullaris controlling the activity of the hypo gastric plexus.

Sahasrâra—Cerebrum.

Samâna-Prâna—Subsidiary nerve centre in the thoracico-lumbar region regulating the activity of the solar plexus.

Samâna-Vâyu—Efferent nerve impulse along the cerebro-spinal nerves.

Shâkini-Shakti—Efferent para-sympathetic fibres starting from the cervical portion of the spinal-cord and controlling the activity of the pharyngeal plexus.

Shakti of a Chakra—Efferent para-sympathetic fibres controlling the activity of a plexus of the sympathetic.

Shivani—Raphe of Perineum.

Sushumnâ-Nâdi—Spinal-cord.

Swâdhisthâna—Hypogastric plexus of the sympathetic.

Swayambhu-Linga—Self-existent phallus. It is the lowest bulbous end of the spinal-cord known as conus medullaris.

Tâlu—Palate, base of the skull.

Tâluka-Chakra—Cavernous plexus of the sympathetic.

Udâna-Prâna—Subsidiary nerve centre in the cervical region of the spinal-cord.

Udâna-Vâyu—Afferent impulse along the spinal-cord.

Vaikhari—See Madhyamâ.

Vajra-Nâdi—A nerve fibre said to exist inside the spinal canal called Chitrâ. It is the fibre of Reissner. Its function is not yet known. It is also known as " Brahma-nâdi."

Yashaswini-Nâdi—Left acoustic nerve.

Vâyu—Impulse.

Vivara—Canal.

Vishuddhi-Chakra—Pharyngeal plexus of the sympathetic.

Yoni—Perineum.

Vrishana—Scrotum.

Vyâna-Prâna—A subsidiary centre pervading the whole of the spinal-cord.

Vyâna-Vâyu--Reflex centre found at the junction of the Prâna and Apâna impulse as well as of the Udâna and Samâna.

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